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The merits of this great work are well known, but for the information of those who may not be acquainted with its character, we subjoin a few extracts from one or two of the many reviews which have appeared of the work :—

NOTICES OF THE PRESS.

"A science of psychology, says Morell, is still a desideratum. We will however hazard the assertion that, in this book of Dr. Hickok, such desideratum is supplied. Whatever may be thought of its completeness, it is the *science* of psychology—the science itself, instead of that mere writing *about* it, or those rambling semi-historical, semi-philosophical discussions of certain topics connected with it, which forms the substance of most of the treatises used in our schools and colleges. Abstract indeed the author is, but there is an intellectual beauty in the mathematical straight-forwardness with which he carries us on from section to section, through every part of his condensed and well-arranged system. Independent of the truths presented, there is awakened a scientific interest, allied to the aesthetic emotion called out by contemplating an exquisite work of art. It is as though some splendid and harmonious structure were rising before the eye, as we observe him preparing for his after-work by the most exact definition, commencing next with consciousness, in order to make a pure and perfect abstraction of all its content, except the indestructible intuitions which, by remaining, show themselves to have been *a priori* conditions for all experience—then, after thus going down to the foundation, returning step by step, and *building up* through the aid of these shaping intuitions an *a priori* science, every part of which has been as rigidly demonstrated as any theorem in geometry—and lastly, going back to experience; not now for the purpose of emptying it in order to get at the underlying cognitions, but to show how its *whole* content is *actually filled up* by a law, in exact correspondence with the before-constructed *a priori* idea.

"Etymological precision is everywhere a constant characteristic of the author's style. When it is difficult to follow him, it is because the region through which he takes us is dark, or it has been but little visited, or, which is more likely, it has become intricate in consequence of being traversed by the confused paths and cross-roads which more careless writers have made in every direction upon its surface, and not from the want of the utmost caution of the author in setting upon it guide-posts at every point exposed to danger of error.

"In these respects, (viz., perspicuity and completeness of arrangements) " we do not deem it extravagant to compare him with some of the master minds of antiquity. His sentences must be studied; and so must those of Bacon, of Plato, and of Aristotle.

" On the other hand, nothing can be more opposed than the method of this book, to a smoky and mystical idealism. As the result of the most diligent study, we are prepared to pronounce the author one of the *most* common-sense writers we ever read. The whole design of the book is to give a substantial ground for all our knowledge; and the result of our own individual experience is this feeling of substantiality as opposed to all that is dreamy and sceptical. We rise from its perusal with the thought that we are on the solid ground,—with a clear conviction of a one substantial nature, a true human soul and a true human body,—a dread absolute personality, and a moral accountibility tremendously real.

" It is in its latter chapters a complete armoury of weapons against the scientific naturalism of such books as the "Vestiges of Creation," and the still worse thing, the spurious ethical naturalism which sinks all ethics into physics.

" After weeks of intense study, we laid it down with the impression that it must be henceforth one of our few books, to be kept as a settled standard for future thinking. We believe the same feeling of substantiality will be left upon the mind of every intelligent man who will give it that close study which is the only worthy tribute to its intrinsic excellence." *Bibliotheca Sacra and American Biblical Repository for* 1851.

" Dr. Hickok's earlier work (Rational Psychology) is remarkable for its profound and comprehensive character, subtle reasoning, and lofty philosophical style. * * It supplies some of the clearest statements of prevalent metaphysical theories we have ever encountered, and contains many valuable suggestions. Its penetrative subtlety of analysis and argument, and its occasional force and even elegance of style, will attract the attention of every competent judge.

"Dr. Hickok is, indeed, a thorough metaphysician, well read, and thoroughly versed in all subjects of philosophical inquiry, a good scholar in other branches, and withal, possessed of an acute and comprehensive mind. His manner has the charm of boldness, vigour, and consistency.

"We rejoice to add that they (Drs. Wayland and Hickok) are living, practical, Christian men, whose great powers are devoted to the defence and propagation of spiritual religion."—*British and Foreign Evangelical Review for October*, 1855.

THE PHILOSOPHY OF THEISM.

THE
PHILOSOPHY OF THEISM:

AN INQUIRY INTO THE

DEPENDENCE OF THEISM ON METAPHYSICS,

AND THE ONLY POSSIBLE WAY OF ARRIVING AT A

PROOF OF THE EXISTENCE OF GOD.

LONDON:
WARD & CO., PATERNOSTER ROW.
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1857.

265. b. 26.

PREFACE.

IN bringing a treatise on Theism before the public, at a time when so many able works have already appeared on the same subject, it may be asked, what distinctive feature does this work possess so as to justify its appearance? We reply, that although much may have been written on this subject to better purpose, yet the particular path pursued here, in several places, has not been taken by any previous writer; and in a question of such importance as that of Theism, no path, however obscure or unimportant it may be in itself considered, should be left unexplored. And although little really positive may have been here gained in proof of the existence of a God, the author at least hopes that it may contribute as a means towards turning inquiry in a direction where ultimate success may be expected.

To prevent the impression that this may be one of the unsuccessful Burnett Essays, it is but justice to say, that it had its origin in the following manner:—Some three or four months ago the author commenced an article, on the dependence of Theism on Metaphysics, for a local newspaper; but it was soon found that, in the short space allotted for such an article, nothing like justice could possibly be done to the subject. He therefore abandoned his original purpose, and continued writing, until what was at first intended to be confined to a few pages had swelled out to the present volume.

To obviate any misconception in regard to the nature and arrangement of this work, a brief outline of its general purport and arrangement may not be unnecessary.

The direct object of the work is not to prove the existence of God, but to investigate the *method* to be pursued, in order to arrive at a proof of his existence.

In the first part we have attempted to show that a purely *a priori* or a purely *a posteriori* proof of the existence of God is impossible. We cannot, on the one hand, arrive at a proof by means of *a priori* elements alone without *experience;* neither can we, on the other, by means of *experience*, without *a priori* elements. The only possible way, then, is by a method which combines both. We have thus two elements in the proof—*objects* or *facts of experience*, and *a priori principles.* But before we can legitimately use these principles in our proof, in opposition to the Atheist, we must first establish their validity. This we cannot do without having recourse to Metaphysics. But here a formidable difficulty meets us at the outset; for Metaphysics itself is a science, the validity of which few Atheists will acknowledge. And, to add to our difficulty, Theists themselves have generally misunderstood or underrated this science. We are therefore necessitated to enter into a vindication of Metaphysics, which forms Part II. We find that the chief objection urged against Metaphysics, is the fact of its present imperfection when compared with Mathematics and the Natural Sciences. We are then led into an examination of the essential difference between Metaphysics and Mathematics, in order to show that, from the very nature of Metaphysics, it must succeed Mathematics, and that its present imperfect state is no proof whatever of any essential defect in its nature. After this, we are prepared to enter into the third, and last, part of the work—a discussion of the method of proof. But before proceeding far, we find that we must have recourse to the principle of Causality, and here, again, another difficulty meets us; for this principle is in about as unsettled a state as Metaphysics itself, and we are then led into a long discussion, in order to fix precisely its nature and import; after which, all that remains is simply the exposition of the method of proof.

It may be supposed that the two first parts of this work have been discussed at an undue length. A careful perusal of the book will, however, we are assured, convince the reader that a full investigation of these points was absolutely necessary, in order to pave the way for what follows.

An objection will, no doubt, be raised in regard to the dry and somewhat repulsive style in which it is written; and although the author has no excuse to make for any faults on this score, yet, he may be allowed to say, that the abstruse and difficult nature of the subject rendered the adoption of this style to some extent necessary.

In an abstract Metaphysical work like the present, the nature of the subject renders a clear and perspicuous style somewhat difficult of attainment. Believing that this object is best attained by divesting the argument of anything that might mislead the reader; the author has endeavoured to adhere rigidly to the thread of argument, and maintain the connexion of its parts in an unbroken line, so that the reader, by close attention, may be able to follow the argument from beginning to end. If he has failed, in any case, in making himself understood, it is hoped the reader will make allowance for this, from the character of the question under consideration.

There are many cases in which elegance of style must be sacrificed for perspicuity and precision. Thus the lawyer has to express himself in a style which is anything but pleasing to the ear of the fastidious rhetorician. In this case the agreeable is sacrificed for the precise; yet no one finds fault with his uncouth and repulsive style. The conviction that the Metaphysician is entitled to the same license, is the Author's apology for the style which has been adopted in the present work.

SEPTEMBER, 1857.

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THE
PHILOSOPHY OF THEISM.

PART FIRST.

METAPHYSICS IN RELATION TO THEISM.

I. AN A PRIORI PROOF FOR THE BEING OF A GOD IMPOSSIBLE.

THERE are two ways whereby it is attempted to prove the existence of a Supreme Being,—the *a priori* and the *a posteriori.* In the one case, we begin with *a priori conceptions;* in the other, with *experience.* The purely ontological or *a priori* argument, under every shape and form, has always appeared to us most unsatisfactory.

We shall notice only one form of this argument, that most in vogue at present: the argument from the existence of Space. The argument is briefly this: Space must either be a substance or the property of a substance; if a substance, then it is God; if the property of a substance, then the substance or substratum of which it is the property, must be God. But this is plainly assuming the objective existence of space, for if space is subjective, as Kant and all the recent German school maintain, then the argument is utterly without foundation. It will not do to appeal to consciousness here; consciousness witnesses to the existence of the conception, but not to the reality of an existence under the conception. Had we an empirical intuition of space, then we might argue that it had an existence separate from the *Ego;* but when the conception is got *a priori*, as in the case of space, consciousness can determine nothing whatever in regard to the transcendental question, whether there is reality beyond the conception. The maintainers of the space argument must prove the existence of space, not assume it.

When it is said that space must either be a substance or the property of a substance, the meaning is, it must either be a thing which subsists of itself, or a thing whose existence depends upon something else; that is, its existence must either be dependent or independent. If we suppose it to exist at all, the law of excluded middle necessitates us to come to this conclusion. But if we mean anything more here, by the terms *substance* and *property*, it is not *a priori* evident that space *must* be either a substance or a property.

Let us suppose space to be a substance—a something which exists of itself, which depends for its existence upon nothing else,—a something that would remain although everything else were annihilated. What then? You might call it God, but still it would be nothing else but space with another name; the only difference being, you now call it God, whereas, before, you called it space. You may call it by whatever name you please, but, *a priori*, you have only the simple conception, space.

Let us suppose it to be a property—a thing which depends for its existence upon something else; we must then infer a substratum—a something upon which it depends. But all that you can say of this substratum is, that it is a something without which the property space could not exist. You are warranted to infer, that there is a substratum for all that you find in space, but you are not warranted to conclude, *a priori*, that this substratum possesses other properties than what you find in space. You are not warranted to conclude, *a priori*, that this substratum possesses, for instance, the property Intelligence or Will. There is nothing in the conception of space which demands that its substratum should possess any such properties; and if you cannot make out that this substratum possesses these properties, you have not proved a God, for intelligence and will belong to the conception of a God, It will not do, in order to get out of this difficulty, to have recourse to some objects of experience, such as an organic body, or any material substance whatever, and then from these, argue the existence of intelligence and will in the substratum which you may have otherwise arrived at a priori; this would be abandoning the a priori method and adopting the a posteriori. If you undertake to prove the being of a God a priori, you must do so from a priori elements alone, or you fail.

And if an intelligent personality cannot be proved from time or space, it cannot be proved *a priori* from anything else, for there is no other existence given to us a priori. The existence of nothing else is felt to be, a priori, necessary. We can, in thought, annihilate every existence except time and space. The mind, a priori, without taking into consideration any fact of experience, is under no necessity whatever of assuming the existence of anything else. If experience tells us that an event has happened, or that a body has come into existence, then we may be warranted to infer the existence of a God, but the necessity of this being would be to us only relative to the fact of experience; that is to say, we would affirm that this being *must* exist, because experience shows us that a body has come into existence. Remove the fact of experience, and the necessity for the existence of the being vanishes.

II. THE A POSTERIORI ARGUMENT.

In the *a posteriori* argument, we begin with the senses, not with the reason: that is, by observation of the facts of the universe around us. But observation alone is not sufficient. The a posteriori argument must have two elements, *observation of facts*, and *deductions* from these facts. Mere observation of the facts of the universe could never lead us to the being of a God. God is not to be found by observation amongst the facts, he must be deduced from the facts. Suppose we observe all the facts that are in the universe around us, we would still be without the knowledge of the existence of God. God lies beyond these facts. We must have some principle by which we can pass from the facts to his existence. When on looking at the facts which are around us, we assert that there is a God, we pass a synthetical judgment, we assert a something which is not analytically contained in the facts. But how can this be done? Evidently in no other way than by principles which are applicable to the facts. We must, therefore, have some principle by which we can connect the being of a God with these facts. Hence the a posteriori argument may fail, either for want of Facts or for want of Principles. Before the argument is conclusive, we must not only establish the facts, but the validity of the principles which we apply to these facts. The matter-of-fact man is apt be overscrupulous about the facts, and overlook the necessary inquiries into the nature and validity of the principles which he applies to them. This seems to be the vice of most of our English treatises on this subject. For instance, in treating of the design-argument for the being of a God, the most of them consist of little else than a collection of examples, of contrivances, of means and ends in nature; while an examination into the principles by which we pass from the objects of design to a designing cause is entirely overlooked. The thing really wanted in the present day, is not more facts or instances of the adaptation of means to ends in nature, but a proof of the validity of the principles by which we conclude that these are the work of an intelligent personal cause.

We have already noticed that when we assert, on looking at the facts of the universe, that there must be a God, we pass a synthetical judgment in regard to these facts; but the question arises, is this judgment *a priori* or *a posteriori*—that is, are the principles by which we pass from the facts to the existence of God, derived from the reason or from experience? If these principles are generalizations from experience, then the whole argument is purely *a posteriori;* but if any of these principles are derived from the reason, then the argument is mixed, being both a posteriori and a priori. One principle absolutely necessary to this argument is the principle of causality, viz., that "every event must have a cause"; but this is one of the principles of the reason, as will yet be seen, hence a purely *a posteriori* argument is also impossible. The only way, therefore, by which we can prove the existence of God, is by the *mixed method*, viz., by means of *a priori* principles applied to the facts of *experience*.

We have, therefore, two essentially different elements in our investigation; we have to examine, 1st, the facts of experience, and 2nd, the *a priori* principles which we apply to these facts; but all inquiry into *a priori* principles is metaphysical, hence the dependence of the question of theism on metaphysics. And on looking around on the present state of the controversy, we find that the opponents of theism dispute the validity of our principles, not the facts; hence the great desideratum at present, is a proof of the existence and validity of our principles. But in order to this, we have to enter into metaphysics. But a difficulty meets us here at the very outset, for not only are the principles themselves disputed, but the validity of the very method by which we can alone establish these principles, viz., metaphysics, is disputed also. And what makes the matter still worse, the majority of theists themselves have foolishly joined hands with the atheists, if not in rejecting metaphysics, at least in despising and treating it with contempt; so that, before we can even commence an examination into the existence and validity of our principles, previous to the exposition of the method of proof, we will require to enter into a vindication of metaphysics itself, as a method of investigation.

III. THE ATHEIST ATTACKS THE PRINCIPLES, NOT THE FACTS.

The bare facts observed by the senses, the Atheist admits; but he disputes the principles by which the facts are explained. We observe an Organ fulfilling a Function, and we affirm that the organ was *designed* to fulfil the function; here we explain the fact, by the principle of Final Causes, and assert that the function was the final cause of the organ. The Atheist admits the fact; but disputes the principle. He admits that there is an Organ and a Function; but denies that the organ fulfils the unction, because *designed* to fulfil it.

The Theist maintains that the function to be performed, determines the organ to be employed. The Atheist reverses the principle, and asserts that the function is performed, because the organ happened to be employed. The Theist maintains that the function determines the organ; the Atheist, that the organ determines the function. Both agree in regard to the bare facts observed by the senses; but differ in regard to the explanation. The one explains the facts upon the principle of *final causes;* the other, upon the principle of the *conditions of existence.*

But to enter more particularly into this matter. The Theist and the Atheist find an organ, they examine it in every part, and both agree in everything in as far as it can be observed by the senses. But they go further. The most of them agree also in the application of a metaphysical principle to the facts of the senses; they agree in the application of the principle of causality to the facts. The senses attest that the organ began to be, that it did not always exist: the reason then asserts upon the faith of the principle of causality, that *it had a cause.* In this, both parties agree; but, as yet, nothing definitely is gained in favour of Theism. One can go all this length, and still be a Naturalist, a Panthiest, or an Atheist. All that we have yet gained, is that there must be an efficient cause of the organ; but nothing is yet learned in regard to what this cause may be. The Theist perceives, that he requires not only to prove that there is a cause for the organ, but he must prove something in regard to the nature of the cause, viz., that it is an Intelligent Personality. In order to this, he examines the organ more minutely, and finds that it fulfils a function, and that it is adapted in every part to fulfil the function. Immediately on the perception of this fact, he applies another principle, viz., the principle of Final Causes, and asserts, that it was *intended* or *designed* to fulfil this function. The efficient cause not only produced the organ, he asserts, but produced it *in order*, or *for the purpose*, that the function might be performed. In other words, the Efficient Cause had the Final Cause in *view*, when it produced the organ.

If the Theist can make good this position, then his point is gained. But how is the Atheist to meet him here? By denying the facts attested by the senses? This he connot do; he must acknowledge that there is an organ, and a function, and that, as a matter of fact, the organ is adapted in every part for fulfilling the function. How then is he to escape the Theistic conclusion? Evidently, in no other way than by denying the principle. That there is an organ and a function, and an adaptation in the organ to the function, is what the senses attest as a matter of fact, and cannot be denied; but that the organ was *intended* or *designed* to fulfil the function, is a synthetical judgment, lying beyond the facts —a judgment made upon the faith of the principle of Final Causes, and is therefore denied. This being the case, it is utter folly to meet the Atheist by a further accumulation of instances of the adaptation of means to ends, as is the fashion with the generality of writers. The point the Atheists denies is, not the *facts*, but the *principle*. But how is the principle to be established? In no other way than by metaphysics. It will not do when this principle is denied, dogmatically to assert it, as is too often the case. It will not do, simply to say, when we see an organ adapted to a function: it *must be intended* for the function; *I cannot but believe* that it was intended to fulfil the function. This sort of arguing will not do; we must be able to give a reason why we *cannot but believe* in the principle—why we say that it *must* be true. We must examine the thinking faculty, and try to find out, not only the reason, but the validity of this confidence, for we may be confident in error as well as in truth; but this is the work of the metaphysician.

There are here four judgments: two derived from the senses, and two from principles.

First, The organ was produced,—derived from the senses, and admitted by the Atheist.

Second, It had a cause,—derived from the principle of causality, and admitted by most Atheists.

Third, The organ fulfils a function, and is adapted in every part to fulfil this function,—derived from the senses, and also admitted by the Atheist.

Fourth, The organ was *intended* to fulfil the function,—derived from the principle of Final Causes, but not admitted by the Atheist.

The work which belongs to the Theist is this: to find out something in the nature of the effect, viz., the organ, from which he can deduce that there was intelligence in the cause. But the real difficulty is, to find a principle by which we can pass from this something in the effect to the intelligence in the cause—a principle to bridge the chasm between the two. The gulf is impassable to the senses. The senses show us the something in the effect; but it is the reason which furnishes the principle, which necessitates the judgment that this something in the effect must have been the result of intelligence in the cause. The senses see the something in the effect; the reason, in consequence of its being possessed of the principle, immediately makes the assertion that there *must* have been intelligence in the cause. Now, the point which the Atheist attacks is the principle of the reason. He denies the principle, and, of course, the truth of the judgment, that this something in the effect, viz., the adaptation and arrangement in the organ, is the result of intelligence in the cause; and then commences to account for it by other means. And hence we have the Development theory, Naturalism, Pantheism, and all those theories based upon the conception, that there is, in matter itself, an inherent tendency to develop itself into organic forms. But it is at once evident, that if we can show that there is a valid principle in the reason, which asserts that the adaptation in the effect *must* be the result of intelligence in the cause, then all these theories are overturned.

IV. PRINCIPLES THE CHIEF THINGS IN A SCIENCE, NOT FACTS.

Whether the science is mental, moral, or physical, the chief things are its principles. Mere facts can never constitute a science; it is only when the facts are connected by rational principles, that we can have a science. Men may cite facts as long as they please; but until they come to an agreement, in regard to the rational principles by which these facts are to be explained, the facts will be of little service to them: mere facts for their own sake, are but of comparatively little value. The principal end in view, in the observation and induction of facts, is to find out the rational principles or laws by which they are connected. Until we find the principles, the facts stand isolated and without a meaning.

There are two things we wish particularly to observe:

1st, That there can be no real settled agreement in regard to any science until men come to agree in regard to the principles.

2nd, That there are in every science, two radically distinct classes of principles, the one mathematical and the other metaphysical. All facts stand to each other in two distinct relations. They stand related to each other in the relations of co-existence and succession in time and space; these constitute the mathematical relations. They stand also related as cause and effect, substance and properties, &c.; these constitute the metaphysical relations. Mathematical and metaphysical principles are radically distinct in their nature and origin; and until we can apply both to the facts around us we never have their real meaning.

In order to find out these principles or laws by which the facts are to be connected, we must examine the facts; yet it does not follow that these laws or principles are got empirically from the facts. The facts observed may only be the chronological condition of the development of the principles in the reason. We may either suppose that the laws are seen in the facts, or supplied by the reason on observation of the facts. They may be either got *empirically* or *a priori*. The former is the case in regard to mathematical principles, the latter in regard to metaphysical principles, as will be afterwards seen.

There are none who will not admit the necessity for mathematical principles in the sciences, but there are many who will deny the same in regard to metaphysical principles; and yet it is a truth that there is no science, either physical, mental, or moral, without metaphysical principles. To go over all the sciences in order to show a metaphysical element in each would fill a volume; but the same thing can be equally well done by a shorter route. It is evident that those sciences wherein the phenomena considered are most simple, and consequently most general, are those least dependent upon metaphysics. If we classify the sciences according to the simplicity or generality of their phenomena, we will find that as the phenomena become more complicated and special, the necessity for metaphysical principles increases in the like proportion. Biology, for instance, is more dependent upon metaphysics than astronomy; mental and moral sciences more so than biology. Now, let us take the simplest of all the sciences—celestial mechanics,—and let us take the simplest problem we can find in this science—say to determine the simple motion of a planet round the sun; and if we find a necessity for metaphysics here, we may reasonably conclude that the same will be found everywhere else. And at the same time let us bear in mind the double object we at present have in view, (1), the necessity of arriving at the rational principles of phenomena; and, (2), the presence of metaphysical principles in all the sciences.

The geometer perceives that the planets must of necessity move along the path constructed in space by his intellect. He perceives that if the two forces which act upon a planet—the centrifugal and the centripetal—are such, the path which the planet will take *must* be such. The forces *may* be of any amount, but if they are of a certain amount, the path *must* be the particular path represented.

But how comes this about? Simply, by means of his principles, he perceives a necessary relation between the quantity of the forces and the path. The rational principles of mathematics do not show us that the forces are such and such. They only show us that if the forces are such, the path is such. The rational mathematics are only applicable here on the condition that the forces are known quantities. We have here a *concrete* element and an *abstract* In order to be able to apply the abstract part, we must know the concrete quantities; but in order that we may always know these quantities they must remain invariable, or if they change, they must change according to a known law; for if the concrete quantities were always changing according to an unknown law, we would always require to be measuring them, and never be able to get the abstract part applied; for before this could be done the concrete quantity would be changed and unknown. In dynamics it is absolutely necessary that the forces remain unchanged, or if they change, they must do so according to a known law. Take, for instance, the calculation of an eclipse. We can calculate for a thousand years beforehand almost to a minute the time when this event will take place, by applying the abstract principles to the known forces which act upon the planet. But this is done upon the faith that these forces will remain invariable. Thus, without the conviction that these forces will remain unchanged, we could have no confidence in our calculations. The question now arises, from whence comes this conviction? Is it from the reason or the senses? Is it derived *a priori* or empirically? If we arrive at the conclusion that this conviction has its origin in the reason, then it rests upon a metaphysical basis, and if so, then metaphysics is necessary in order to investigate the principle upon which it rests. But let us examine and see if such is the case. Our confidence that the centrifugal force which acts upon the planet will remain unchanged depends upon the First Law of motion. The question then arises, on what does our conviction in the first law of motion depend? It depends evidently upon the principle of causality. We say that unless some cause, either internal or external to the body, change its velocity or turn it aside, it will always continue in the same state; because we perceive that if it were to change, and yet no cause, either within or without, to act upon it, it would be an event without a cause, and thus contradict the principle of causality, that every event must have a cause. Mr. John Stuart

Mill, in his Logic, vol. ii., page 373, professes to dispute this point; but he manifestly misunderstands the real point in regard to the law, which is known a priori. He says:—"So again of the First Law of motion, that a body once moving will, if left to itself, continue to move uniformly in a straight line. An attempt is made to prove this law by saying that, if not, the body must deviate either to the right or to the left, and that there is no reason why it should do one more than the other." "But," he adds, "who could know antecedently to experience whether there was a reason or not."

Here the point is misunderstood. It is not asserted that we can prove, a priori, that there is no cause or tendency in a body to deviate from a straight line; whether such a cause or tendency does, as a matter of fact, actually exist in the body, can be only learned from experience. What we affirm, a priori, is, not that there is no such cause, but, that a body moving in a straight line with a uniform velocity, will always continue in that state, *if* no cause change either its motion or direction. The reason does not say, that there is no cause, either in or out of the body, which might do this; but it affirms, and that with the most absolute certainty, that it must for ever continue in that state, unless some cause produce a change. And hence the absolute confidence which we have, that unless some new cause come into operation, the planets must continue to move as they have hitherto done.

Thus, in this simple instance, we find that mankind have come to a universal agreement, in regard to the motions and paths of the planets, not because they have seen their paths and measured their motions; but because, by the aid of mathematics, they have been led to perceive the very paths along which they must move, and from which they cannot deviate. And we have found also, for instance, in the case of the eclipse, that mathematics would be of little value, were not the concrete part guaranteed by a metaphysical principle. Now if such be the importance of metaphysics, in such general and purely physical questions, how essential must the consideration of metaphysical principle be, in such a complicated and special question, as that of the existence or the being of a God; a question not regarding the relations of time and space, but the *existence* and *nature* of a *cause*.

V. DIFFERENCE BETWEEN MATHEMATICS AND METAPHYSICS.

It has been already noticed, that the judgment that there is a God, is not analytically contained in the facts which are observable by the senses, but synthetically deduced, by the aid of metaphysical principles, from the facts.

It has been also noticed, that it is not the facts, but the principles applied to the facts, which are disputed by the atheist; hence, the real disideratum in the theistic contraversy is, not new fact, but a proof of the reality and validity of the principles; and this can be done in no other way, but by a critical investigation of the faculty of thought, or in other words, by metaphysics. This will be further evident, by considering the nature of metaphysical principles.

In regard to mathematical truths, this is not so much required, for they can be shown to be true, without this investigation. Take a necessary mathematical judgment —for instance, 3+2=5, and we will not find one but will admit its truth; but take a necessary metaphysical judgment—for example, "every event must have a cause," and we will find many who will dispute it. But if both are necessary judgments, how does it come to pass, that the metaphysical one is not as universally admitted as the mathematical? The reason is, the mathematical one can be shown to be true, without any metaphysical investigation into its nature and origin; whereas, the metaphysical one cannot. Although mathematical judgments, as has been clearly shown by Kant, are always synthetical—the predicate being always a something added to the subject, and never analytically deduced from it—yet we can pass from the subject to the predicate, with the most absolute certainty; because, we do so by means of a sensible intuition. The conception which we add to the subject, we construct by an intuition, which can be made evident to the senses; the connexion between the subject and the predicate is thus seen to be real. We may analyse the conceptions of 3 and of 2, as long as we please, but will never find that they are equal to 5. In order to this, we must go beyond these conceptions, and have recourse to an intuition; we must take points or objects corresponding to the number 2, and then, by degrees, add the units contained in the intuition to the conception of three, and thus find the sum to be five. Now if any one were to deny that 3+2=5, all that we have to do, is to make him add these two points . . to the number three, and he will find it to be five. The same is the case in regard to geometry. In showing, for instance, that the three angles of a triangle are equal to two right angles, we construct in relation to the triangle, and the right angle, a figure or figures, from which it can be seen that they are equal. We might analyse the conception of a triangle as long as we please, but would never arrive at the conclusion, that its three angles are equal to two right angles.

But in regard to metaphysical synthetical judgments, there is no intuition whatever to connect the conception contained in the predicate to the subject. The predicate lies outside of the subject, and is felt, or rather cognized as necessarily connected with it, and yet the bond of connexion cannot be seen. In mathematics, we perceive them united in an intuition; in metaphysics, we cognize them as united without perceiving any bond of connexion. For instance, we see an event happening. We instantly, without perceiving the cause, affirm that beyond this event there was a cause—we know that it must have been connected to a cause, and yet, nothing whatever may be seen of the cause: nothing being in view but the event. Now if any one were to demand our authority for this judgment, what answer could we give? In regard to the mathematical judgment, we could show him the intuition—the bond which unites them; but here we can show no bond of any kind whatever, and yet, we make the assertion with the most absolute certainty and confidence. The only answer which we can give, is that it is a law of our intelligence, to think a cause for every event; that when the event is experienced the intellect furnishes the conception of the cause. But this is not all; this only proves it to be a subjective law—it only proves, that we must think a cause for every effect. But we must also prove its objective validity; that it holds not only true in thought, but in the external world of reality. In order to do this, we must have recourse to metaphysics; for the science which treats of the nature, origin, and validity of our a priori knowledge, is what is properly called metaphysics.

VI. THE DEPENDENCE OF THE QUESTION OF THEISM ON METAPHYSICS.

The conclusion, then, which we arrive at in regard to the question of theism is this: since there can be no proof either a priori or a posteriori of the existence of a God, without the aid of metaphysical principles; since it is the case that we always do, and always must, use these principles in our reasoning, we must be able to show that these principles, which we take for granted, and use, are valid; but this we cannot do without a metaphysical investigation into their nature and validity. Mathematical judgments we can show to be valid simply by a sensuous intuition; but in regard to the synthetical judgments we make in proving the being of a God, we can do nothing of the kind; they are made simply upon the faith of principles, and unless we are able to substantiate their validity—give our authority for using them, we never can be able to defend our argument against the attacks of scepticism and infidelity.

And, on looking abroad on the controversy that is at present agitating the world on this question, we find, as a matter of fact, that the real point attacked, is not the facts which we adduce, but the principles which we apply to these facts. Hence, what we at present require, are not new facts, either from the geologist, the astronomer, or physologist, but a proof from the metaphysician of the validity of our principles. And if we had this, the facts which we already have, will be found more than sufficient.

The facts of the geologist or the physiologist are good in their own place, but of what avail are they, while mankind are unsettled and at variance in regard to the principles by which these facts are to be explained. For all that has been said of late regarding the testimony of geology, physiology, &c., in favour of theism, yet, on examination, it will be found that little positive aid has been rendered by these sciences. It is true, they have done a great deal in a negative sense—the discoveries in these sciences have tended to overturn false hypotheses, but little or no aid has been rendered towards establishing true principles.

The opponents of theism have not been satisfied with simply denying the principles of the theist; but they have attempted explanations of their own, by means of counter principles: for instance, the Development theory. The facts adduced from those sciences, have proved such theories to be false. But we may prove the development theory to be false; yet this will not prove the theist's principles to be true. We may prove all the hypotheses which ever have been broached to be false, but we cannot conclude from this, that our theory is therefore true. In fact, there is no end of this kind of work, for no sooner will we succeed in demolishing one false theory, than another will arise in its place; and things may go on in this manner for ever, for while the fancy of men is able to invent a new theory, our work will not be at an end.

It is only a loosing of time to be fighting against false theories; what at present is required, is neither to invent new principles nor demolish old ones, but to examine the thinking faculty, and find out what are its a priori principles—show that these principles by which we pass from the facts of nature to nature's God, are not mere arbitrary principles, but exist in the very constitution and make of the intellect itself; and that therefore, all opposition and scepticism is utterly foolish and useless. This is really what is wanted, and until we get this, the question never will be settled; but this is a want which neither geology nor physiology can ever supply. The only science which can give us the aid we need is metaphysics.

The principles by which we arrive at the being of a God are metaphysical, and since metaphysical principles cannot, as in the case of mathematics, be verified by means of intuitions, we must find some other criterion by which they are to be tested. Were they generalizations from experience, we could analyise them and arrive at the facts from which they were derived; but they are not empirical, but *a priori*, being derived directly from the intellect, hence there is no way of showing their validity but by a metaphysical investigation into their nature and origin. We must first show that they are *a priori*, and then show that all *a priori* knowledge is necessary and imperative, and that all scepticism is foolish and useless. Having done this, the theistic controversy would soon be brought to a close; for all that we would then have to do, would be to point the atheist to the facts which he admitted in common with us, and by means of these principles deduce the being of a God from them. The facts he would not deny; the mere formal process of applying the principles to the facts, he could not dispute, for this would be guaranteed by the laws of logic; hence the chain would be complete, and there could then be no escape from the conclusion.

It is not sufficient to be able to show that the facts *can* be explained by the principles which we adopt, and then conclude because, as a matter of fact, we have explained them, that the matter is settled; for many questions can be apparently settled in different ways, by adopting different principles.* We require to be able to show, not that our principles will explain the facts; for it is more than probable that our opponent may be able to say the same thing in regard to his principles; but we must be able to show that the facts *must* be explained by them—that our principles are given to us *a priori* from the intelligence, and must be adopted.

VII. THE PRESENT STATE OF THE QUESTION.

The real state of the theistic controversy at present seems something like the following. Men have examined the external world, and in so far as the bare facts observed by the senses are concerned, have come to an agreement; but it is observed that these facts have two classes of relations. First, They are related in regard to *time* and *space*. This relation is investigated by means of mathematics; and, for reasons already given, men have come to an agreement here also. Secondly, but these facts stand related to a something called a *cause*, a *substance*, &c.; and this relation is investigated by means of metaphysics—but here, for reasons which have been explained, men begin to differ widely. In searching for the cause, for instance, of organic bodies, one party, by adopting certain principles—say those of final causes —comes to the conclusion that there is a personal and intelligent creator. Another, by adopting different principles, comes to the conclusion that we have no evidence for the existence of such a being, but that there is some inherent tendency in matter itself to assume these organic forms, by a long process of gradual development; that matter, from an inherent tendency in itself, grows out of one species into a higher.* What does the theist then do? He finds that it is needless to begin and dogmatically assert the truth of his principles, for the atheist can do the same thing. If he would do what he should do, he would invite the aid of the metaphysician, and begin to investigate the nature of his principles, and try to find their origin in the intelligence itself. But no; he rejects this method of procedure, and instead of applying to the metaphysician, applies to the geologist for facts to overturn his opponent's principles. The genius of a Hugh Miller supplies the want, and the Development theory perhaps falls to the ground. But what real advance is made? None whatever. True, the Development theory may by this means be numbered among the things that were; but then no sooner is it gone than the same genius which invented it, will invent another to supply its place; and although another Hugh Miller should arise and demolish it, another hypothesis, and another, will arise so long as the world lasts.

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* No false principle will explain all the facts; but a false principle may explain all the facts as far as we may know them. The Corpuscular theory, at one time, explained all the facts known in optics. The same may be said in regard to Franklin's *plus* and *minus* theory of electricity.

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* I do not say that all advocates of the Development hypothesis are atheists; but I assert that the notion of development lies at the base of all forms of anti-theism, whether you call it atheism, pantheism, or naturalism.

All the aids derived from geology and physiology of late, which have been so much extolled, have been of this kind. They have been simply useful in demolishing false theories; but these sciences have not in the least had the effect, nor are they capable, from their very nature, of establishing the true theory. This would soon be seen to be the case if the atheists would only change their tactics, and instead of broaching principles or theories of their own, in order to explain the origin and causes of things, adopt a consistent positivism, and reject all inquiries into causes, either efficient or final, as lying beyond the reach of the human mind. If the atheists were to assume this position, the geologist and the physiologist would soon find themselves utterly helpless.

Without even going so far, the atheist would soon baffle the natural philosopher, by simply refraining from attempting any explanation of his own in regard to the causes of things, and rest contented with simply attacking the principles adduced by the theists.

PART SECOND.

A VINDICATION OF METAPHYSICS.

I. THE FOLLY OF REJECTING METAPHYSICS.

It is quite a common thing to hear metaphysics spoken of with contempt, as if it were something visionary and chimerical, not worthy of the attention of sober thinking men; while perhaps with the next breath the same parties will talk of demonstrating the being and attributes of the Deity, as well as other truths in natural religion, with absolute certainty. Nothing can be more ridiculous and absurd than this, when the proof for the being of a God, and all other doctrines of natural religion, depend upon metaphysics, or, in other words, upon synthetical judgments a priori; for metaphysics is the science of a priori synthetical judgments.* That natural religion as a whole depends upon metaphysics is evident, for there can be no natural religion without a God, and the proof for the being of a God depends upon the principle of causality as given a priori. An empirical principle of causality is not sufficient. We must have the principle *a priori*, or we never can reach the being of a God. We must be able to say, "*every* event *must* have a cause."

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* Mathematical judgments, of course, are not included; yet the above definition is perfectly correct, as mathematics is not a priori, as will afterwards be seen.

If it were of empirical origin, we could have no warrant for such an assertion, for there might possibly be exceptions. All that we would be warranted to affirm would be, every event, as far as our experience has reached, has had a cause. In regard to events which we never experienced, we might affirm it to be probable they might have had a cause, but of this we could have no certainty. For ought that we could say to the contrary, they might be without a cause. Now, creation is an event which we never had any experience of. That things did not always exist, but had a commencement, can be easily shown; but it does not follow of logical necessity that they had a cause, unless the principle holds universally true without an exception; but this we cannot affirm, unless it is of a priori origin.

Were this contempt of metaphysics confined to the illiterate, it might be passed over, but such is not the case. For example, we have no less an individual than Isaac Taylor speaking in the following terms:—

"In a word, mathematical and experimental philosophy stand related to each other, in respect of their certainty, nearly as equations; the difference being against the latter by the amount of a very small deduction for possible errors. But no absolute estimate can be formed of the relation between metaphysical science and the experimental knowledge of human nature, because no positive or definite expression can be given of the philosophical value of the former. In every particular instance it is as if, in looking to the data of a problem in arithmetic, the figures expressing one of the quantities were blurred, or partly obliterated, so that it was impossible to decide whether it should be read 901 or ·001."

—Introductory Essay to Edwards on the Will; Note Z., p. 158.

"A science may properly be said to have passed its period of infancy, or to have reached a degree of maturity, when the existence of sects and opposition within its precincts is no longer possible, or when its fundamental principles, or its more important deductions, are no longer liable to be called in question by well-informed men. Thus, it may safely be said that though mathematical, astronomical, mechanical, and physical science may hereafter receive important additions, they have attained their maturity, and will not again be utterly subverted. Chemistry is reaching, or has reached, this maturity. Quite so much must not be affirmed of Geology. Political Economy stands, perhaps, on the same stage of hopeful growth. Far below it rests that quackery (founded, nevertheless, on real important facts), to which the improper term Phrenology has been assigned. If the phrase infancy is thought to be unseemingly applied to all sciences so ancient as metaphysics, the author can think of none other that would be appropriate, unless the analogous word DOTAGE were admitted in lieu of it."—Ibid, Note R., p. 152.

Thus the proof for the being of a God, and consequently the very existence of natural religion, rest upon a science which, according to Isaac Taylor, is in such a state of "dotage" that it has lost all power of discrimination, and can only be likened to blurred arithmetical figures in which you cannot tell whether, in any particular case, 901 or ·001 are the terms made use of.

As the questions which depend for their solution on metaphysics are the most important which can engage the human intellect, it is worth while enquiring whether these heavy charges brought against this science are well founded. If we have no sure standing-ground in metaphysics, we never can rise above the objects of sense, but must be contented to remain in the narrow and dreary prison-house of positivism, without God and without hope in the world.* If any one is anxious to know what the world would be without metaphysics, let him read Comte's Positive Philosophy. Comte is the true representative of man without metaphysics. It does all very well for parties like Isaac Taylor to despise metaphysics, and treat it with contempt, while they are allowed to take advantage of its principles to secure to themselves the great truths of natural religion. But if all metaphysics, and all that depends upon it, were swept away by an importation of positivism, these gentlemen would perhaps be the first to complain.

Is metaphysics really in the uncertain state represented by this writer? I think that masterpiece of metaphysics to which his essay professes to be an introduction gives this opinion the flat contradiction. The thing which puzzles these gentlemen is, why are mathematics and the mathematical sciences so far advanced, while metaphysics is in so uncertain a state, seeing that the one is about as old as the other. And the answer which they have returned to the question is, that there is something essentially uncertain in the very nature of the science itself, which renders it utterly useless as a method of investigation in any department of inquiry. But might it not have occurred to them that the cause of the uncertainty might perhaps arise from the dulness of the subject himself, rather than from any essential defect in the matter to be comprehended. The human race, like single individuals, must acquire its knowledge after a certain order which it is vain and impossible to reverse. There is a cause which determines the order of the acquisition of our knowledge according to a definite law. Some sciences, in the nature of things, must precede others, and this may be the case in regard to mathematics and metaphysics. To expect that metaphysics should, at the present day, be in as high a state of perfection as the mathematical sciences, may be as absurd as to have expected that the transcendental calculus should have been perfected as soon as simple arithmetic. Although the human mind can come to as great a certainty in regard to the calculus as in regard to simple arithmetic, yet the human mind cannot come so *soon* to certainty in the one case as in the other; and the same may be said in regard to mathematics and metaphysics. The human mind may be as capable of arriving at certainty in the one science as in the other, although not so soon.

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* In so far as Natural Religion is concerned.

In examining the sciences according to the order of their development it is not difficult to find out the reason why the one has chronologically succeeded the other; or in other words, we can find out the cause which determines the order of their acquirement; or again, the law according to which they must be acquired. When we find out the reason why chemistry and physiology, for instance, must succeed physics, we are then not the least astonished, why pshysiology and chemistry are in such an imperfect state compared with physics;

ever there is a change there must also be a cause; but beyond phenomena, upon this principle, change has no meaning, and consequently causation cannot possibly have any application.

Here is the position into which modern philosophy has brought the question of theism. The subjectivity of time and space has destroyed the very possibility of arriving at the knowledge of the being of a God, by the a posteriori method, and rendered null and void all the efforts of the natural philosopher on this question. Who then is to help the theist out of his difficulty? Who can help him? He who can show the reality of time and space. Can the geologist, can the natural philosopher, or the empirical psychologist do this? No, none but the metaphysician is equal to the task. The psychologist may tell us, that we are conscious of having the conceptions of time and space, but not that there are external realities corresponding to these conceptions. He may dogmatically assert, that he cannot but believe that time and space are real existences—are not subjective; but the rustic will as dogmatically affirm this in regard to colour, and some other of the secondary qualities of matter. A mere conviction that a thing is true, is no proof that it is so, unless this conviction can be shown to rest upon a fundamental law of our nature; but the mere having the conviction, does not prove this. To show that a certain conviction has its origin in a law of our nature, we require the aid of metaphysics.

Hence the utter uselesness of the Scottish Psychology, when separated from metaphysics; and hence, also, the dependence, as well as the origin, of the theistic question upon metaphysics.

Question Third.

IV. THE END OF THINGS.

The third and last great question which the human mind seeks to answer, is, What is the end of all things? This question can, no more than the two we have already considered, be answered by empiricism. The empirical philosopher may tell us the event which may succeed any existing state of a phenomenon, and then the next and the next; but he never can terminate the enquiry. He never can reach the Final Cause or End of all things. He can never state what that thing is, which is worthy to be sought after, for its own sake; what that end is beyond which nothing higher can arise. And until we arrive at this point, the final and ultimate cause of the universe, we never can be satisfied. For although we may know the Efficient Cause of all things, yet if we do not know the Final, the answer to our question is not obtained.

Enough has been stated to show that metaphysics is the oldest science, and several reasons have also been given why, at present, it is the most imperfect of the sciences. We have found that metaphysics must come last, as the great questions which the human mind seeks to answer, in their last analysis, become metaphysical; and since metaphysics must succeed all other sciences, any one might conclude, a priori, that it would likely be the science last in being perfected.

But there are other reasons besides those which have been already given, why it is the most imperfect of the sciences, and as this point is one of great importance, I shall state them.

B.—The Reasons why Metaphysics is the Science last in being perfected.

> "Philosophy is the last development of humanity, the most clear in itself, but the most obscure in appearance. There everything is obscure for the senses and imagination; but there, also, all is lucid for reflection." —COUSIN.

I. MEN BEGIN WITH THE SENSUOUS EXPLANATION OF PHENOMENON, AND PASS TO THE RATIONAL.

There is an old adage, that seeing is believing; this is particularly true of man in his primitive state. He is far more easily convinced by "occular demonstration" than by rational, even though the latter mode should be the more satisfactory. Tell a number of rustics that colour is a something adhering to the object, and they will all likely agree with you, in your explanation, because, they will tell you, they *see* that it is a something in the object. But if you give them the true explanation, that colour has no existence whatever in the object, but is simply an affection of the mind, the probability is, that you would not get one of them to receive your explanation; yet in course of time, they could be brought to accept the rational explanation in preference to the sensible. This in a great measure explains, why men have come to an agreement in regard to mathematics, while so few can be found to agree in metaphysics. When a mathematical truth is disputed, we can represent the truth by a sensible representation, and then tell the sceptic to look and *see* that he is wrong. But a metaphysical truth can never be represented in a sensible intuition; so that when it is disputed, it can only be established by showing that it is logically connected with some other truth, known to be true, or that it has its origin in the intelligence itself.

When we prove a metaphysical truth, by deducing it from another truth, we prove it logically; but when we establish a truth, by tracing it up to its origin in the mind itself, we prove it metaphysically. Logical proof must ultimately rest upon metaphysical proof. We can prove a certain truth, by showing its logical connexion with some other truth; but this other truth must either depend upon its logical connexion with some other truth, or it must be an ultimate truth. If the former, we must trace it up until we reach the ultimate truth, from which it has been logically deduced, and when we reach this point, should the sceptic not agree with us, all our logical proof is lost. Hence, we must find some way or means of showing that, in the regressive process, the ultimate principle is true. If it is of empirical origin, that is, if it be a generalization from experience, we must analyse it, and establish it from the facts from which it is an induction. But if it be of *a priori* origin, and this is the only kind of truths with which we are at present concerned, we must establish its truth by a metaphysical investigation into its nature and origin. Logic is merely *formal*, it never shows a thing to be actually true; it shows a thing to be true, because it is so connected with something else which is true. Logic affirms that a thing is true, upon the faith that some other thing is true. It does not say that a thing is actually true; it only says, if this *is* true, then that *must* be true. It merely connects truths by a necessary bond, so that if one be true, it makes sure that the others are also true. But metaphysics is necessary, in order to show that the ultimate a priori truth is actually true. Logic cannot do this, for the truth is not derived from another. It cannot be established by induction, for it is not a generalization from experience. How then can it be shown to be true? In no other way, but by an investigation into its nature and origin, in the intelligence, and this is what is called transcendental metaphysics.

Logic is almost now a perfect science. When a question arises regarding the *formal* or *logical* truth of a thing, it is soon decided; for most men agree in regard to the laws of logic; but when its *actual* truth is the question, disputes then arise which are not so easily settled, because the question is then metaphysical. But if the metaphysics by which we investigate the origin and truth of our a priori knowledge were as perfect as our logic, then men would come to an agreement in regard to the metaphysical or actual truth of a thing, as well as in regard to its formal or logical truth: hence the necessity for metaphysics.

II. METAPHYSICS HAS TWO DIVISIONS,—PURE METAPHYSICS, AND APPLIED METAPHYSICS.

There are, therefore, two distinct divisions of metaphysics. In the one, we enquire into the nature, validity, and origin of a priori principles; in the other, we investigate nature by means of these principles, by applying them. For example, when we speak of proving the being of a God metaphysically, it is the latter kind of metaphysics we mean; for our meaning is, we prove the being of a God by means of metaphysical principles. But when we investigate the nature and validity of these principles themselves, which we thus apply in our proof, then this is the former kind of metaphysics.

For distinction's sake, I shall, for want of better terms, call the one Pure Metaphysics, and the other Applied Metaphysics. The terms may be well or ill chosen, this is of little importance; I merely use them to serve myself in the meantime. That there is a distinction between the two kinds of metaphysics, few, I think, will deny, and if so, then convenience demands that we have different terms to distinguish them.

Applied Metaphysics, as we have found, is as old as man. The very first man on seeing the first change would instantly pass the judgment that it must have had a cause. Here would be Applied Metaphysics, here would be a judgment passed by means of a metaphysical principle. But Pure Metaphysics is of comparatively modern date. The same is the case in regard to Logic. Men began to reason logically long before they began to investigate the nature and validity of the laws according to which they reason.

Men would reason logically, that is, apply logic as it were naturally, from the beginning; but when a sceptic disputed the logical truth of their conclusions, they could not meet the sceptic, because they could not show him the logical law on which it rested. Hence the necessity for a science of the *formal* law of thought (Logic.) And when this was attained, then all disputes regarding the formal truth of things were easily settled. The very same is the case in regard to metaphysics. Men will naturally judge metaphysically, they will naturally apply the principles of metaphysics in their investigations; but when the sceptic disputes the correctness of the result, they are unable to meet him, because they cannot give the metaphysical reason, why it must be so; that is, they cannot show the laws of thought in regard to metaphysical principles. Hence the necessity for a science of Pure Metaphysics. Without this science, Logic is of little value, for of what use is it to convince a man that a thing is *formally* true, if we cannot also show him that it is *materially* true.

This in a measure explains also, why metaphysics is both the oldest and still the most imperfect of the sciences. Applied Metaphysics began with the first man, but it never could come to perfection, without Pure Metaphysics, or a science of the laws of thought, in regard to the principles of metaphysics. Hence the form which our inquiry now assumes, is, Why are mathematics and logic so perfect, while pure metaphysics is so imperfect?

In order to this, we will require to enter a little into the nature of these sciences.

III. THE ESSENTIAL DIFFERENCE BETWEEN MATHEMATICS, LOGIC, AND METAPHYSICS.

In metaphysical or philosophical reasoning, the understanding follows an entirely different path from what it does in mathematics. In philosophical reasoning, we always cognize the particular in the general—the particular conclusion we cognize *in* the general conception—the process is, therefore, analytical: but in mathematics, the order is reversed—the conception which forms the conclusion is not cognized *in* the conception from which we proceed, but added to it—the process is therefore synthetical. The science which treats of the laws which the understanding follows, in the former, is called Logic. Hence, mathematics is entirely extra-logical.*

Philosophical reasoning is analytical. From the general conception, by the principles of contradiction and identity, we *educe* the particular conception which forms the predicate or conclusion. In mathematics, we proceed synthetically.† To the particular conception we

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* Inductive Logic, it is true, is synthetical; but although induction is synthetical, yet the inductive law is entirely different from the mathematical form of thought, as could be shown, were this the proper place to treat of induction. By no possible means can mathematics be brought under logic, or logic under mathematics. Mathematics and Logic being both *formal* sciences, and, at the same time, differing essentially in regard to their *form*, it is folly to attempt their union, as some of our late philosophers have been doing.

† As the terms analytical and synthetical have, in philosophy, different shades of meaning, it may be well to state that when we affirm philosophical reasoning to be analytical and mathematical to be synthetical, we mean

add the predicate. There is a something in the conception which forms the predicate, which is not analytically contained in the conception from which we reason; this something we add to the conception, by means of an intuition. We thus, as it were, construct the conception, which forms the conclusion, by means of intuitions.

Mathematical reasoning is therefore constitutive; philosophical, discursive. Mathematical and philosophical reasoning are thus essentially different, in regard to their form.

Metaphysical *a priori* principles are however synthetical. In metaphysical principles, the predicate is not analytically contained in the subject, but lies outside of it. For instance, in the metaphysical principle, "every event must have a cause," the predicate "must have a cause," is not contained in the subject, "every event." But the predicate here is not derived from the subject, by the laws of logic. It is not by reasoning that we come to the conclusion, "that every event must have a cause." The mind is so constituted, that it adds the predicate to the subject.

Here then we have the difference between mathematical, logical, and metaphysical judging.

In mathematics, we proceed synthetically; we add a something to the conception—we affirm or predicate of a certain thing a something which is not contained in it. When a sceptic denies that the predicate belongs to the subject, we can by means of an intuition show him the

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nothing more by these terms than that, in the one case, the conclusion is derived from a conception which previously contained it, while, in the other case, it is added to it; that in the one case the conceptions became more special, while in the other they become more general.

connexion. We can, as it were, before his eyes, construct the predicate by means of an intution, and then tell him to look and he will see them connected.

Logical reasoning is analytical; in logical reasoning we merely affirm a something of the subject which is contained in it. And when the sceptic denies that our predicate belongs to the subject, we show him the predicate actually existing in the subject.

In what is called metaphysical reasoning, that is, reasoning from metaphysical principles, we proceed analytically by the laws of logic. But in metaphysical judging, that is, in metaphysical a priori principles, we proceed synthetically. But we do not, as in the case of mathematics, pass from the subject to the predicate, by means of intuitions; nor can we educe it from the subject, by means of the principles of contradiction and identity, because it is not analytically contained in the subject. Now when the sceptic denies that the predicate of a metaphysical principle belongs to the subject; what is to be done? If any one were to deny that "every event must have a cause," how could we meet such a one? We could not, as in mathematics, connect the two by means of a sensuous intuition. Neither could we, as in logic, educe it from the subject itself. The only possible way would be to show, that from the very constitution of the mind, we attach such a predicate to such a subject. But this will not satisfy the sceptic. He replies, although it is true that we are constituted so that we attach such a predicate to such a subject, it only proves that it is subjectively connected, not that in the world of reality things are so connected. For instance, we are constituted, so that when we see an event we affirm a cause. True, the sceptic will reply, we are constituted so that we must think, or judge that there is a cause, but is our judgment correct? Our merely thinking there is a cause, does not satisfy me that in reality there is one. The principle, the sceptic may admit, holds subjectively true, and yet deny that there is any evidence to conclude that it holds objectively true. Hence we are landed into the perplexing question, of the relation between *thought* and *existence.* This question must be settled before we can oblige men to come to an agreement, in regard to metaphysical principles, and yet, until men are settled in regard to these principles, there can be no universal agreement in philosophy.

Hence the absolute necessity for a science of the nature, origin, and validity of metaphysical principles; or in other words, for a science of Pure Metaphysics. Hence, also, the reason why metaphysics (Applied Metaphysics) is so unsatisfactory in comparison with Mathematics. In mathematics, all scepticism is settled by means of intuitions; in mere formal reasoning, all disputes are settled by the laws of logic; but in metaphysics, when the question is, regarding the actual truth of things, we cannot come to an agreement for want of the existence of a pure science of metaphysics, that is, a science of a priori metaphysical principles. When the complaint is raised against the unsatisfactory state of metaphysics, it is generally the Applied Metaphysics which is meant; but Applied Metaphysics cannot be shown to be valid against scepticism, without a science of the principles which we apply. But in mathematics this is not required; the mathematician can convince his opponent by simply looking at the reasoning itself, without any inquiry whatever in regard to its nature; for in his case there is always a sensuous image before the mental eye, which serves the place, and saves the trouble, of any inquiry into the nature of the reasoning itself. If a mathematician can reason, this is all that he requires. His very reasoning convinces, because he has the aid of a sensuous intuition, which is seen by the mental eye to be correct in the process itself. But with the philosopher things are quite different. The philosopher has to show that his reasoning is both formally and materially true; that is, both logically and metaphysically true. It is true that when he is reasoning, he is convinced of its formal correctness; but if any one were to dispute the formal truth of his reasoning, although he was convinced himself that it was true, he could not, like the mathematician, show how it was true, by means of intuitions used in the process. In order to this he must have recourse to Logic. He requires a science of the formal laws of thought; that is, he can only remove scepticism in regard to the formal truth of his reasoning, by exhibiting the actual laws of thought in the reasoning. Without this science all that he could do would be to assert dogmatically that it was formally true. But the philosopher has not only to show that his reasoning is formally correct, but also that the premises from which he reasons, are actually true. If the premises are empirical, that is, generalizations from experience, he has to examine the facts from which they are derived, so as to find that the induction is correct. But some of the premises are metaphysical a priori principles, the truth of which can neither be exhibited by induction nor deduction; and hence the necessity for a science of the nature and validity of our a priori metaphysical principles. Philosophy or Applied Metaphysics, can no more dispense with such a science than it can with Logic. The philosopher requires Logic to attest the formal correctness of his reasoning; and transcendental, or Pure Metaphysics, its actual truth. Such a science, however, may scarcely be said to have an existence. Hence the reason why most philosophical and theological questions are in such an unsettled state; for almost all questions in Theology and Philosophy are mixed up, or are in some way or other dependent, upon a priori principles. Take, for example, the Theistic question: we have more than one of these principles involved in the argument, and of what avail is it although we may be able to maintain every other part of the argument, if we are not able to show that these principles are to be trusted; and how can we do this without some investigation into their nature and validity, or in other words, without Pure Metaphysics?

IV. HOW THE HUMAN MIND PASSES FROM THE SENSUOUS EXPLANTION TO THE RATIONAL.

It is in accordance with the very nature of things, that the true metaphysical explanation of phenomena should succeed the mathematical. It is quite true, as the positive philosopher affirms, that the metaphysical explanation is attempted as soon, if not before, the mathematical; and the reason of this we have shown, for it is the desire to get the metaphysical explanation which began and still carries on the human mind in all its inquiries. But the nature of things is such, that all attempts at the metaphysical explanation must remain imperfect, until we get the mathematical.

The laws of phenomena must be known before their causes. The relations of time and space before the relations of cause and effect, substance and properties.

We begin with the sensuous explanation, and gradually pass on to explanations less sensuous and more rational. The slightest acquaintance with the progress of the sciences will show this. Take any of the sciences at random, or any fact in any of them, and observe the progress of the human mind in the explanation of that fact. There is a piece of violet-coloured cloth, and a piece of red, lying on the table before us. We all agree in regard to the simple fact of the senses, that the one piece is red and the other violet. We ask, What is colour? Our first explanation is, that it is a something covering or adhering in the object, and the proof which we give, is because we *see* it to be so. Here is a purely sensuous explanation. But we soon observe that a change of light will change the colour, and we then conclude that colour is not in the object but in the light. Here the explanation becomes a little more rational, and less sensuous. We suppose, then, light to be fine material particles which fall on the object, and are reflected back upon the eye; and that the one piece appears red, because the red light is reflected by it, and the other violet, because the violet light is only reflected. But we soon find out that our explanation is still too gross and sensuous, and that light is not composed of fine particles of different colours, which pass from the object to the eye. We find that what we call light is the result of the undulations of a medium which intervenes between the object and the eye—that an object appears luminous, because it has the power of producing undulations, in this medium, which strike the eye; and that difference in colour is caused by difference in the number of undulations which strike the eye in a given time.

Here we have arrived at the position which the explanation has reached at the present day; but the explanation is not complete. The most advanced inquirers are beginning to be convinced that the explanation is still too sensuous, and that we must advance to an explanation still more rational. At first, when the undulatory theory was thought of, it could not be conceived without assuming the existence of a material medium; but our advanced scientific inquirers are beginning to perceive that it can be better explained by dropping the notion of a material medium, and supposing the undulation to be merely the mathematical path taken by forces.

It is always with great difficulty that the human mind gets quit of its sensuous explanations; in fact, it is forced to abandon them. New facts arise which cannot be explained while the sensuous part remains, and it is obliged to seek a more rational explanation. For example, we begin by explaining colour to be a something adhering to the object itself, and we assert we see it to be so; but new facts arise which will not agree with this explanation. For instance, we observe a change of light produces a change of colour, hence we drop our explanation for one more rational, viz., that colour is in the light. Then if colour is in the light, the light must then be coloured: red light must be a something red; violet light a something of violet colour. At this stage, we cannot conceive how it can be otherwise, but new facts arise; for instance, certain phenomena connected with coloured plates and the fringes of shadows, which will not tally with the notion of light being a coloured substance, which is emitted from the object: we then drop this explanation and assume the more rational one of undulations. But as yet we cannot conceive undulations without conceiving a material medium which undulates; but again, new facts arise which will not agree, and we resign this notion of a material medium for one more rational, viz., that of forces. But here again, we cannot conceive how forces can exist without matter; but new facts and a little more inquiry help us over this difficulty. We find that all that is required for the existence of forces, is a *substratum* or *substance.* If we know that under the force there is an abiding something—a substance or substratum,—the mind is then satisfied. It is then at once seen, that there is no use for supposing matter necessary as a substratum; for that which we call matter—that extension and solidity which are cognizable by the senses—requires a substratum also; hence to assume that matter (this extension and solidity) is necessary for the existence of force, is a useless hypothesis, it is assuming that forces rest upon a something which rests upon a substratum. It is resting the property force upon the properties extension and solidity, and then the properties extension and solidity upon the substratum; and the question then arises, why may not the property force rest directly upon the substratum, without the intervention of the properties extension and solidity? Having arrived here, we can now easily get quit of the notion of matter being necessary as a medium.

But the human mind does not stop here. On looking at the phenomena around us, we have two elements. In our explanation we have Matter (meaning by matter, that solidity and extension which affect the senses) and Force. We can now conceive the one existing without the other—matter existing without force, or force existing without matter. But we wish to bring them both under a higher unity. We cannot get quit of force, for we find that all bodies are compressible, which would not be the case were not the particles held separate by a force. Now, since we cannot get quit of the notion of a force, we then try if we can get quit of the notion of matter (meaning by matter, of course, that property solidity), that is, we try if we can explain the phenomena, extension and solidity, by means of the conception of a force. We at once perceive that, if, for instance, a square inch of space were to become impenetrable—that is, if it were to resist the approach of other bodies into it—even although it were completely void, this square inch of void space would appear to the senses to be solid. It would appear to the eye as an inch of extended matter, for it would reflect the rays of light in the same way, and to the same extent as other matter. It would be solid to the touch, for it would resist the hand. This being the case, we can easily drop the notion of solidity, of solid atoms, and conceive them as forces. For if two forces were to proceed, the one from a centre, and the other towards it, the point where these two forces would balance each other, would be the surface of the atom; and it would then appear extended and solid, that is, it would have extension and resistance: for solidity, as we shall yet see, is a mental hypothesis, conceived in order to explain resistance. Elasticity, upon the old principle could not be explained without supposing the solid particles endowed with a force—a force acting beyond their surface. Attraction implied a similar force, to bring the solid atoms together. But here these two things arise as a necessary consequence from the very nature of matter being a force; for it is evident that if matter is composed of forces acting against each other, when we go beyond the point where the two forces balance each other, we will be carried in towards the centre, until we reach the point where the forces are in equilibrium, viz., the surface of the atom. And if we go within this point, we will, of course, be carried outwards until we reach it again. Non-elasticity in a body may be conceived to arise from an arrangement of its atoms, so that when struck, the reaction of one atom may be neutralised by the direct action of another. When this does not take place, when all the atoms act in harmony, the body as a whole will react—be elastic; but when the reaction of the one-half of the atoms, are neutralized by the direct action of the other half, the body as a whole will not react, and consequently will be non-elastic. And as for the secondary properties of bodies, it is as easy to conceive, if not much easier, how they may arise in the *subject* from matter, on the supposition of its being a force, as on the supposition of its being an inert solidity.

Now, when we can as well explain the phenomena around us upon the single conception of a force, as upon the double conception of both a force and solidity; when the phenomena are as well explained with one of them without the other, the other then becomes superfluous, and the law of parsimony, which forbids us to multiply principles of explanation unnecessarily, determines that we drop the notion of matter being solid, and adopt the principle of forces. And that this is the point towards which all science is at present tending, no one who is acquainted with the late researches of such men as Faraday, will for a moment deny.

But this is not all, when we explain light by *undulations* instead of *emissions*. How are we to explain colour? We shall suppose that up to this time colour was thought to be something in the object; but what conceivable relation could there be between undulations and colour? We may just as well conceive light to be a sound or a smell, as that undulations should produce colour. To us the one would seem just as absurd as the other. Hence, then, we must drop the notion that it is something in the *object*, and assume it to be a something in the *subject*. And this conception we find at once explains the mystery. We see then, that a certain number of waves or undulations striking the eye in a given time, 477,000,000,000,000 in a second, produce the sensation which we call red; 577,000,000,000,000 in a second, the sensation of green; 699,000,000,000,000 in a second, the sensation of violet. Thus, we arrive at the conclusion, that the colour is not anything in the cloth, but an affection of the subject. Thus, our explanation has led us into two entirely different directions. The colour of the cloth resolves itself, in its last analysis, into an affection of the subject. The cloth and the light, which are necessary conditions of the existence of the affection in the subject, in their last analysis, resolve themselves into a force—the phenomenon called light, arising from certain mathematical directions, called undulations, taken by these forces; and the phenomenon called matter, arising from two forces, the one acting towards, and the other from, a point or centre.

But it will be observed, and this is the point we wish to be at, that in whatever direction we follow the explanation, we at last land in metaphysics. We begin with the mere facts of sense, and end at last in metaphysics. It matters not in what science, or in what part of any science we begin, all our explanations at last end there.

Hence the reason why metaphysics must come last. We begin with senses, and end in pure thought—metaphysics.

The reason of all this, is perfectly obvious. Metaphysics is the science of the principles of the reason. Now, in explaining phenomena, we try to induce a unity amongst the multifarious facts of the senses; we try to bring so many of them under a certain law—to get a number bound together or included under one conception; the conception then explains the facts. This conception is the law which connects the facts. But we find that we must have a still higher unity, and we try again to reduce the number of conceptions or laws, by finding a conception of a higher order, which will include or bind together a number of these conceptions into one. We proceed in this manner, always trying to arrive at unity by reducing the number of laws or conceptions, by finding laws more general, until at last we bring all phenomena under one or two conceptions or laws. We then say that these conceptions explain the whole. By these conceptions, we then observe a unity in all things: we say then we understand them.*

The question now arises, whence do we derive these laws or conceptions which bind the facts together. Are they derived from or found among the facts themselves, or are they supplied by the subject? or, in other words, are these laws subjective or objective? Is the unity we see in nature a real unity, or merely ideal—a unity induced upon it by the mind?

A Kantian, who holds the ideality of phenomena, of course must hold the ideality of the laws of phenomena also; but we, who believe in the objectivity of time and space, and consequently in the objective reality of phenomena, as far as its primary qualities are concerned, must reply, that phenomena, considered as things in themselves, must have laws,—that they actually stand related to each other according to these laws or conceptions. But although this unity in nature has a real existence in nature, apart from the subject, we may still ask the question, How do we arrive at the knowledge of this unity—that is, How do we come to find out these Laws or Conceptions, which explain or unite the facts? Are they arrived at by induction, or are they known by the mind a priori? We answer, some of them are discovered in the facts themselves by experience, and others are known a priori by the intellect. The fundamental laws, those which include all the minor ones, are got a priori from the reason. These a priori laws are metaphysical principles.

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* "Philosophy is the tracing back of all that exists to its ultimate law, to the highest formula of abstraction and reflection."

"In regard to every subject, so long as we have not arrived at the elementary ideas of this subject, at its metaphysics, we have arrived at the foundation of nothing, we are ignorant of the last expression of everything."—COUSIN'S HISTORY OF PHILOSOPHY, Lectures 9th, 11th.

V. HOW THE HUMAN MIND ARRIVES AT A KNOWLEDGE OF THE LAWS OF NATURE.

We never can find out a law by mere observation alone. We must have some previous theory or hypothesis to guide us in our observations. Even the most strenuous opposers of a priori knowledge; such as Comte, Mill, and Lewes, admit this fact. How then are we to commence? By making a metaphysical or theological supposition, says Comte, in regard to a law, and then observing the facts in order to see if they will agree with the assumed theory.

What then are these metaphysical conceptions with which the human mind first commences? How must the human mind begin if it is to bring the whole facts of the universe into a unity? We will see this by observing how we would begin if we were to make a correct survey of a kingdom or a large island. Would we begin at a corner and examine a small part minutely, and then proceed to another part, and then another, until we had gone over the entire kingdom? Certainly not. We might by this means get a correct plan of each separate section; but we could not, by this means, be sure that each part stood in its proper relations to the whole. The relation of street to street in a town would be correct; but the relation of town to town, or county to county, would in all probability be incorrect. In order to bring the whole into a unity, we must first take a general survey of the entire kingdom, or island, and make large divisions, in order to get the correct form of the whole, and then make the smaller subdivisions in relation to the larger; and by so doing, we get not only a survey, correct in detail, but correct as a whole.

Now the very same holds true in regard to the examination of the phenomena of the universe. If we were to begin by taking each separate science, or part of phenomena, by itself, we never could form a conception of the whole as a unity. We must commence by making a general survey of phenomena as a whole—form fundamental ideas of how we are to proceed in our inquiry—of what we shall purpose searching after in our future observations. We must divide our future labours into fundamental divisions, and then proceed in relation to these divisions.

But how is this to be done? On opening our eyes on the multifarious facts of the universe around, each fact appears isolated, without any connexion with the rest; all is mystery and confusion. How then are we to commence our divisions? An arbitrary division will not do; for each one would divide his labour to suit his own fancy, and there could then be no union of observation, and all would end in confusion. The proper divison to be made could not be seen in the facts, for as yet no law or general conception is known, everything is isolated from the rest.

The only other possible way, is that the reason itself should furnish us with the proper conception, or rather with the idea of the division, and this we shall find actually is the case. These ideas we have already noticed. They are, 1st, the idea of a Substance or Substratum; 2nd, the idea of a Cause; and 3rd, the idea of an End. On looking at the universe around us, these ideas prompt us to ask three questions. First, in regard to its Nature; second, in regard to its Cause; third, in regard to its End. We ask, *What is it? What is its Cause? What is its End or Purpose?* And all future inquiry is only an attempt to answer these questions. These three ideas, or rather the desire to realise these three in nature, act as it were like an instinct to keep inquiry always in the proper direction. And although men may take different paths, yet they will in the end come to the same point.

Here again, we have the origin of metaphysics, as we have already noticed. Here we have the answer to the question, Why is it the oldest of the sciences?

In answering these three questions, we begin with the objects of sense; we try to bring so many of them under one conception, to find out a law which will unite them; proceeding in a manner similar to what we have already shown in regard to our explanation of light and colours. At first, our explanations are sensuous and often far from being correct: we proceed gradually onwards to explanations more rational, until, at last, we get some general conception, which will include or explain all the facts. But gradually as we proceed, the conceptions become more rational and metaphysical. For example, when the question is, What is this table before us? we trace up the colour until it resolves itself into a sensation of the mind: this is the conception which explains it. The matter of the table, we trace up until it is resolved into a force; the light by which it is seen we trace to the same source. But the ultimate conceptions up to which we wish, and seek, to trace everything, are the conceptions or ideas from which we started. What we want is:

1st, The Substance or Substratum of all things.
2nd, The Cause of all things.
3rd, The End of all things.

Hence, although we trace up matter and light to a force, colour to a sensation, &c., we are not yet satisfied. The guiding idea here, is to find out the substratum of all things. But here, as yet, the unity which we seek is not complete. Neither force nor sensation is a thing which can exist of itself. We must proceed until we find the substratum or substance to which they belong.

We must proceed in the same manner in regard to the Cause of all things, and the End of all things. We must find out the conceptions which will include all the multifarious facts of the universe. We must be able to see all these multifarious facts included in these three conceptions. Having found these conceptions, we must be then able from them to proceed backwards, and deduce all the facts out of them—show how these conceptions account for all things. Having reached this point, we can then say that we can explain the facts, that we understand them. This is the position to which the human mind strives to attain. To realize this high position, however, will be the work of eternity. The human mind seeks to attain to the conceptions of a Substance, a Cause, and an End; which, when known, will account for all things, past, present, and to come.

Now, it is metaphysics, which, at the commencement, told us, a priori, that there are a Substance, a Cause, and an End, which include all things; and it is metaphysics which at last discovers to us what these three are. At the commencement, metaphysics only told us that there were a Substance, a Cause, and an End, which included all things; but it did not then say anything in regard to what they were. This could not be attained, until the mathematician and the natural philosopher had finished their task. After they had given their explanations—after they had carried the generalization from the mere objects of sense, up to the highest point they could go, the metaphysician would then, from their highest conceptions or laws, carry the process upwards, by means of a priori principles guiding his observation of facts, both internal and external, until he reached the final answers.

Here we have the complete explanation of the mystery which seems to puzzle such men as Isaac Taylor: why metaphysics is both the oldest and the most imperfect of the sciences. To ask the question, Why is metaphysics (Applied Metaphysics) not as perfect as the Natural Sciences? is the same question as, Why is the metaphysical explanation of the universe not as perfect as the mathematical? But such a question is as absurd as to ask, Why is the Second Book of Euclid placed after the First? or Why does the schoolboy learn the First before the Second? The answer is the same in both cases, viz., The knowledge of the one is the pre-requisite to the knowledge of the other.

A man can no more rise, by one step, from a piece of coloured cloth, to the conception that the colour is a *sensation*, and the matter of the cloth a *force*, without passing through the transitionary ideas, than he can step from the first proposition of the First Book of Euclid to the thirty-third of the Sixth, without the aid of the intervening demonstrations.

VI. THE MATHEMATICAL SCIENCES SHOULD BE STUDIED BEFORE THE METAPHYSICAL OR PHILOSOPHICAL.

Mathematics and the Natural Sciences should always be studied before metaphysics, although the order is reversed in our Universities. It is next to impossible for any one who has been always accustomed to treat subjects in the concrete, to be able, at once, to grasp thought in the purely abstract form in which it is found in the higher metaphysics. The study of the theoretical Natural Sciences, is necessary to enable the mind to pass from the concrete to the abstract.

VII. ANOTHER REASON WHY MATHEMATICS IS IN A MORE PERFECT STATE THAN METAPHYSICS:

MATHEMATICS IS AN EMPIRICAL SCIENCE—
METAPHYSICS AN A PRIORI SCIENCE.

There is still another reason why men have come to an agreement in regard to mathematics sooner than in regard to metaphysics; a reason which seems to have been entirely overlooked by philosophers. It is this; mathematics is a science of experience—of empirical origin,—metaphysics of a priori origin. This however is in direct opposition to the common opinion. But a little consideration will show, that mathematics could never be acquired a priori.

Mathematical conceptions are concerned with the relations of co-existence and succession in time and space. That the conceptions of time and space are not got from experience, is evident, for these conceptions are the logical conditions of the very possibility of experience. But from the mere conceptions of space and time, we could never form a single mathematical conception. A mathematical conception cannot be conceived without a sensuous image in the imagination. We can have no conceptions regarding a triangle, without having in the mind an image of a triangle. We cannot conceive a number, without conceiving either an image of the figure which represents it, or of a number of points corresponding to the number. When we think of the number five, for instance, we must either conceive of it as represented by the figure 5, or by five points
. . . . . or by some other sensible image of some kind or other. Neither Arithmetic nor Geometry is possible without this.

Now although space and time are a priori, yet we could never conceive of anything in space or time without an empirical intuition. Without an empirical intuition, we could not in thought conceive so much as a line or a point. Hence mathematics is impossible, a priori, without experience.

Two things are necessary to mathematics: the conceptions of space and time; and the conception of something in space and time. The former conceptions are got a priori; but the latter can only be got through an empirical intuition. It is quite true, that with nothing more from experience than the mere conception of body, we might by the imagination construct the conceptions of mathematics. We might construct triangles, right angles, right lines, points, &c., but this would not warrant us to affirm mathematics a priori. For, by the imagination, we might, in a similar manner, construct a centaur, a house, a tree, or a castle in the air; for the one class of figures are as susceptible of being created by the fancy as the others. And if this is all that the mathematician means by his science being a priori, the Poet or the Painter has as good a right to claim the honour as he has.

VIII. THE NECESSITY OF MATHEMATICAL JUDGMENTS DO NOT PROVE THEM TO BE A PRIORI.

Oh! but say Kant, Whewell, and almost all our modern metaphysicians, mathematics must be a priori, for its truths hold universally and necessarily true; a thing impossible, they say, were they of empirical origin.

Mathematics, we have found, can be in no other respect a priori, than poetry or painting, or any other art or science depending upon the creative power of the imagination. Man can construct any mathematical figure by means of the imagination; but he can do the very same in regard to any other kind of figures.

But how comes it, it is asked, that mathematical truths are necessarily and universally true, if they are of empirical origin? We shall try and answer the question. But let it be observed, that this is the ground upon which the advocates for the a priori origin of mathematics rest their claims; so that, if we succeed in showing how mathematical truths hold universally and necessarily true, we then overturn their proof for the a priori origin of mathematics.

The necessity of all mathematical judgments rests upon the principle of identity, viz., that A=A or 1=1. Now, it does not matter how we come to know that 1=1, whether it is from experience or a priori; when once it is known, we then know that the judgment 1=2, must of necessity be false. If 1 is seen by the eye, for instance, to be equal 1, we then know that the judgment, that it is equal 2, must of necessity be false. Take the judgment 2+3=5; how do we know that these two numbers are equal to five? By an empirical intuition we represent one of the numbers, say the first, by two points . . ; and then, take the other number, and add it to them, thus: three and . are four; four and . are five; and by this means they are found to be equal to the number, 5. Or we do it thus: $\overbrace{.\ .}^{2} + \overbrace{.\ .\ .}^{3} = \overbrace{.\ .\ .\ .\ .}^{5}$ They are thus seen by the eye to be equal. And be it observed that, according to Kant, the great advocate of the *a priori* origin of mathematics, this is the way we come to know that 2+3=5.

Now, keeping our eyes upon the representation, if any one were to deny that $\overbrace{.\ .}^{2} + \overbrace{.\ .\ .}^{3} = \overbrace{.\ .\ .\ .\ .}^{5}$; and assert, that . .+. . .=. . . . We would say, with the most absolute certainty, that he *must of necessity* be wrong. Why? Because it is given us a priori, independent of experience, that two and three are equal to five? No, but because we see with our eyes, that . .+. . . is the very same as . . . . .

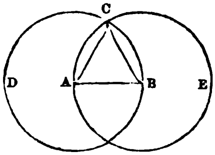
But it will be asked, how does it hold universally true through all time and all space? Simply, because what we mean by two in all time and all space, is this . ., and what we mean by three in all time and space is . . . Now, if this is what we mean by 2+3, in all time and space, then . .+. . . in all time and space, must be . . . . .; for the two equations are the very same; now . . . . . is 5.

A tree, while it is a tree, must be a tree; there is no necessity for a tree being a tree, but so long as it is a tree, it must be equal to a tree. There is no necessity for any numbers being 2+3; but while they are 2+3, they must of necessity be identical to 5.

The same holds true in regard to the truths of Geometry. Let us take the first proposition of the First Book of Euclid. We prefer this problem not only because it is the simplest, but because in showing that it is derived from experience, nothing will require to be taken for granted. If we should make choice of the second, third, or any of the succeeding propositions, we would either require to take something for granted, or go over all the preceding demonstrations. But if we can show that the first is derived from experience, no one will doubt but the second, the third, and all the succeeding propositions, may also, in like manner, be got from the same source. We shall copy the problem as it stands in Cassell's Edition of Euclid.

"PROP. I.—PROBLEM.

"*To describe an equilateral triangle upon a given finite straight line.*



"Let AB be the given straight line. It is required to describe an equilateral triangle upon AB."

"From the centre A, at the distance AB, describe (Post 3) the circle BCD. From the centre B, at the distance BA, describe the circle ACE. And from the point C, in which the circles cut one another, draw the straight lines (Post 1) CA, CB, to the points A, B. Then ABC is an equilateral triangle."

The mere process of describing the figure, no one will claim to be a priori. Let us proceed then to the demonstration.

"Because the point A is the centre of the circle BCD, AC is equal (Def. 15) to AB." That AC is equal to AB, is derived from the Definitions, for we have made them the radii of a circle, and the radii of a circle we define as lines, which are equal (Definitions 15, 16.) "And because the point B is the centre of the circle ACE, BC is equal to BA." This of course is derived also from the same source. "But it has been proved that CA is equal to AB," that is, we have made them radii of the same circle, and radii we define to be equal. "Therefore the two straight lines CA, CB, are each of them equal to AB." This is merely a statement of what has been presently proved. "But things which are equal to the same thing are equal (Ax. 1) to one another." Nothing could be easier than to arrive at this axiom through experience. If we find that two rods are exactly of the same length as a third, experience will show us that they are equal to one another. It will not do as an objection, to tell us that we can have no experience of rods of absolutely the same length, for if our rods *appear to us* to be of the same length, they will produce the same impression, and answer the same purpose as though they were *absolutely* of one length: but more of this shortly. And as for the *necessity* of the axiom, it is simply this: the rods *a* and *b* we find from experience to be of the same length as a rod *c*, which is, say 2 feet in length; this being the case, it is then an identical proposition to say that the rods *a* and *b* are each 2 feet long, and if the rods *a* and *b* are each 2 feet in length, it is also an identical proposition to say that they are equal; hence it does not require an a priori insight to be able to say, that if the rods *a* and *b* are equal to a rod *c*, two feet in length, they *must of necessity* be each two feet in length, or in other words, if two rods are equal to the same rod, then they *must* be equal to one another. There is no necessity for any two rods being equal to a third, but if they are equal, it is then an identical judgment (not an *a priori* one, as some metaphysicians would have us to believe), to say that they *must of necessity* be equal to one another.

And the reason why we know that it holds universally true, is simply this: all mathematical conceptions admit of being represented in an empirical intuition; now what we can represent by means of an empirical intuition, say on paper, we can copy or represent in the imagination without paper. Now when we want to know whether the axiom holds true in some distant reign of space, we have then nothing more to do than try the three rods by means of the imagination, in the same way as we would actually do with three rods, were we there present; and we then find that the two rods which we imagine as equal to a third, are equal to one another.

"But things which are equal to the same thing are equal to one another, therefore, CA is equal to CB;" this, of course, follows from the axiom. "Wherefore the three sides CA, AB, BC, are equal to one another;" this judgment does not require anything more than experience, for since it has been found that CA and CB are equal to AB, the axiom guaranteed that they were equal to one another, and if equal to one another, and also equal to AB, this is in other words saying, that the three sides are equal. "The triangle ABC, is, therefore, eqilateral;" this follows from our definition, for we have defined (Def. 24) an equilateral triangle to be a three-sided figure, with its three sides equal. "And it is described upon the given straight line AB." We know that this is the case, for we have described it upon this line.

Thus we have found, that the first proposition is entirely derived from experience, and if time and space permitted, we might easily show that the second, the third, the fourth propositions, yea the whole of Euclid was derived in a similar manner from experience.

The necessity of mathematical judgments, arise from the principle of identity. The way whereby we come to perceive the identity, for instance, of the subject and predicate, is not by any a priori revelation, as in the case of metaphysical principles; nor analytically, as in logic; but by means of an empirical intuition, either drawn by the imagination, or upon paper.

In logical judgments, the identity of the subject and predicate is perceived analytically, because the predicate is contained in the subject; but in mathematics this cannot be done, for the predicate lies always outside of the subject—being always synthetical. But their identity is perceived by means of a sensuous intuition, which unites the two. In no case, whatever, do we pass from the subject to the predicate *a priori*, but in every case *empirically*, by means of sensuous intuitions.

In judgments where the predicate is a something which is denied of the subject, or which contradicts it, as for instance, 2+2 are not equal to 5, it is arrived at by means of an intuition, in the same manner as when the subject and predicate are identical. We know that 2+2 are not equal to 5, because, by means of an intuition, either upon paper or by the imagination, we perceive that they are not identical.

Now, it is easily seen, how men have come to an agreement in regard to mathematics, sooner than in regard to metaphysics. Mathematical and metaphysical judgments are both necessary; but man in his primitive state, is less apt to be sceptical in regard to mathematics, than he is in regard to metaphysics. Take for instance the mathematical judgment, 2+3=5, and compare it with the metaphysical one, "Every event must have a cause." Both judgments are felt to be necessary; but it is not easily seen how the metaphysical judgment is necessarily true; for there is nothing in an event from which we could infer analytically, that it must have a cause: this predicate cannot be found in the conception of an event. How then, the rustic inquires, can I affirm that it must be connected with the subject? He feels puzzled to know this, and hence he becomes sceptical.

But in regard to the mathematical judgment, 2+3=5, he can be in no doubts about the matter, he will reply; for he will take his pen and prove it thus: ..+...=.. ... And if you were to ask him how he knows that they are equal, he would likely reply, If you have eyes you might see that $\overset{2}{..} + \overset{3}{...} \equiv \overset{5}{.. \; ...}$ In the case of mathematics, we have only to appeal to the senses, in order to remove scepticism; but in the case of metaphysics, it can only be done by means of an inquiry into the nature and validity of a priori principles, or in other words, by a science of pure or transcendental Metaphysics.

Because mathematics is concerned with perfect lines, and perfect circles, &c., mathematical conceptions, says Dr. Whewell, must therefore be got a priori, for we can have no experience, he says, of a perfect circle or of a perfectly straight line. We cannot draw a perfect circle, or a perfectly straight line, neither can we find any in nature, for there are none; hence the conceptions of a straight line or of a perfect circle must be got a priori. But his reasoning is not conclusive; for although we cannot draw, for instance, a straight line, yet we can draw one which will *appear* to be straight. If the imperfection of our vision prevents us from observing the curves or irregularities which may be in it, it must then appear to be straight; and of course, must produce the very same impression on our minds, as it would do were it *absolutely* straight. And the very same holds true in regard to all other kinds of mathematical lines and figures.

But in addition to this, it is a gratuitous assumption to assert that there are no perfect lines or circles in nature. Mr. John S. Mill, though an advocate for the empirical origin of mathematics, falls into the same error. He asserts that nature is constructed not *absolutely* according to mathematics, but only approximately according to it. And that when mathematics are applied to nature, they do not give us a result *absolutely* correct, but only *approximately*. But so far from this being the case, there is, probably, not an atom in the material universe which moves, not simply in approximation to the laws of mathematics, but absolutely in agreement with them. There may not be a mathematician in the universe who could calculate the path of a single atom with absolute correctness; but this does not prove that the atom does not move absolutely in agreement with mathematical laws; but only, that the conditions of the problem, from the infinite number of different influences acting upon the atom, are such, that no mathematician has intellect equal to the task.

If the forces of the universe are invariable, or if when they vary, they vary according to a mathematical law, all this which we have affirmed can be demonstrated to hold true in regard to the motions of matter, were this the proper place.

Now, although we cannot find in nature a perfectly round pebble, or a perfectly straight rod, &c., this does not prove that there are not in nature objects perfectly straight. From the imperfection of our senses we are only able to view matter in the mass; the pebble which we behold is composed of an innumerable number of separate parts. Now, although the congregated mass, (and it is only such that our senses can discern) taken as a whole, may not be perfectly round, yet the parts of which it is composed may. The same may be argued in regard to straight objects.

But enough has been stated to show the reasons why Metaphysics has not yet attained the same state of perfection which Mathematics and the Natural Sciences have. We have found that its present imperfections, instead of being a proof its "dotage," is only the result of partial development. When it has obtained settled and admitted principles, we may then predict for it a high destiny. When the day arrives, that the ideal and intellectual will be valued above the mere objects of sense, metaphysics, from its pre-eminently ideal and sublime nature, will become the most popular of all the sciences.

PART THIRD.

METHOD OF PROOF.

I. INTRODUCTORY.

WE have found that the solution of the problem of Theism depends upon metaphysical principles, and that what is really required at present, is not new facts from the Natural Philosopher, but a proof of the validity of our reasoning in regard to these facts. We found that the aids received of late from the discoveries in Geology, &c., have been useful only in a negative sense; that is, in overturning counter-hypotheses raised by the opponents of Theism, but that they are completely inadequate for proving the existence of a God: this alone can be done by metaphysics.

Having fully investigated the nature of metaphysics, and shown its necessary relations to the question at issue, and I trust also, removed all objections to metaphysics as a satisfactory method of inquiry, we are now, after this somewhat long but indispensable preliminary investigation, prepared to address ourselves directly to the main object in view, viz., to show how we may arrive at a positive solution of the great problem of Theism.

We found at the commencement that an a priori proof of the existence of God was impossible; time and space being the only two things whose existence were felt to be a priori necessary, but these in no way whatever could be shown logically to imply either intelligence, will, or sensitivity; and there being no other existence a priori, at least to us, without some fact of experience, we have not the least ground to argue the existence of intelligence of any kind whatever; hence we must begin with experience.

In proving the existence of God we must prove his existence as a Cause or Creator.

II. CREATION OF MATTER.

It cannot be proved from the mere existence of matter, that it must have had a Cause or Creator. In order to this, we must know that it began to be; but beginning to be is not implied in mere existence. Before we can show that matter requires a Creator, we must prove that it did not always exist. Whether this can be done apears to me doubtful, unless we adopt the dynamical theory of matter.

The common metaphysical argument used by Clarke, Baxter, Cudworth, and others, against the eternity and self-existence of matter, is certainly nothing else than a play upon words. We shall take Clarke as a specimen:

"The material world cannot possibly be the first and original being, uncreated, independent, and of itself eternal." (Why?) "For since it hath been already demonstrated, that whatever being hath existed from eternity, independent, and without any external cause of its existence, must be *self-existent.*" It is granted that what has existed independently from eternity, must be self-existent; but why may not matter be self-existent? Because, says Dr. Clarke, that which is self-existent must "exist necessarily, by an absolute necessity in its own nature, so as that it must be an express contradiction to suppose it not to exist."—*Demonstration of the Being and Attributes of God, p.* 22.

"The only true idea of a self-existent or necessarily existing being, is the idea of a being, the supposition of whose non-existing is an express contradiction."—*Ibid, p.* 16.

We grant that matter is not self-existent after this fashion; but still the argument is not complete; for it is not evident that that which is self-existent must exist, so that it is impossible to conceive its non-existence. Neither is it evident, that a thing may not have been eternal without being necessary after this manner. The proof he adduces is the following:

"Of every thing that *is*, there is a reason which now does, or once, or always did, determine the existence rather than the non-existence of that thing. * * * That which derives not its being from any other thing, the ground or reason why it exists rather than not-exists, must be in the thing itself; and it is a plain contradiction to suppose its own will, by way of efficient cause, to be the reason of its existence; it remains that absolute necessity (the same necessity that is the cause of the unalterable proportion between 2 and 4,) be by way of formal cause, the ground of that existence."—*Letters to a Gentleman, p.* 35.

We grant that everything which *is*, has a reason why it exists rather than not. If it is a thing which began to be, it is a sufficient reason why it exists, that it had a cause; and if it is a thing which never began to be, it is a sufficient reason for its existence that it always existed. Nothing more is required than that it never was otherwise than existing. If it eternally had actual existence, this accounts completely why it now exists. No, says Clarke, there must have been a something to *determine* why it exists rather than not. Nothing of the kind. There must be a *subjective reason* why it existed, and this reason is, that it never did but exist; but there was no use for anything to *determine* its existence, for this very simple reason, that its existence never was determined, it being always in existence, and consequently excluded the possibility of any determination whatever, in regard to whether it should exist or not. If there was any determination in regard to whether it should exist or not, it must have been made previous to its existence, or else, the determination would come too late; but nothing could be prior to the existence of this thing, for the supposition is, that it eternally existed.

But it will be replied, that although nothing preceding in the order of time could determine it, yet something preceding in the order of nature must have determined it. If the thing supposed to be determined, was anything which had a dependent existence, such as an act, a property, or mode of a substance, and if this dependent thing was said to be eternal, then it would require something antecedent in the order of nature to determine its existence. But the thing here which is said to be determined, is not any property or act, but the substance matter; matter with him being not a property, but a separately existing thing—a substance. Now, if a substance be supposed to have existed eternally, it neither requires a cause nor a substratum ; if it has always existed this is enough.

III. CHANGE IN MATTER.

We have seen that the mere existence of matter does not logically imply a cause or creator; the same may be said in regard to motion. Matter might have existed eternally in motion, as well as at rest. Mere motion does not imply a cause; it is only beginning, or change of motion, which suggests the idea of a cause.

But we go further, and assert, that even change in matter, although it logically implies a cause, does not logically imply a creator, meaning by creator a first cause.

Change implies a cause, but not a first cause. But it will be said, a cause implies a first cause; for there either must be a first cause—a beginning of causation,—or an infinite chain of dependent causes, without a first cause. This is admitted; but this is taking for granted that an infinite chain of dependent causes—of relative commencements—is logically impossible.

I do not say that an infinite chain of dependent causes is possible; but the reverse. But I have not yet seen any logical proof, that the thing is abstractly impossible. But let us test the common argument against its possibility, which is this :

There is no link in the eternal chain necessarily existent—there is no link which contains within itself the reason of its own existence, each link being dependent for its existence upon the previous link. The cause of the existence of each link is a something out of itself. Now when all the parts are dependent, the whole cannot be independent. If all the parts are dependent upon a something out of themselves for their existence, then the whole must be dependent for its existence on a something out of itself; and since this chain does not contain within itself the cause of its existence, but is dependent on a something without, this something without, must be prior to it in the order of nature and of time, (for the cause must be so to the effect) and if anything be prior to the chain, then the chain cannot be said to be eternal. Or, to state the argument in fewer words: As each link is dependent on a something preceding, the whole chain must be dependent upon a something preceding; and if dependent upon a something before, it cannot be eternal. Or, in other words still: The cause of the existence of this chain must either be in the chain itself, or out of it. If in the chain, then it must have a necessary existence, and if it has a necessary existence, all its parts cannot have a dependent existence. But the supposition is, that all its parts have a dependent existence, hence the cause of its existence must be out of itself; and if it depended for its existence upon anything out of itself, then it could not have been eternal; for we must always suppose the cause to be prior to the thing produced, and if anything was prior to this chain, then it could not have been eternal.

This, I think, is a full and complete statement of the argument. The great error in the argument, and in all attempts to prove the absurdity of an infinite series, consists in a false idea attached to the terms, *whole* chain, *beginning* of the chain, &c. They always, in idea, limit the chain—they always attach the idea of a beginning or first link to the chain. I say that they must do this, or it would be impossible to conceive any difficulty about the matter. Now if the chain is infinite, then it is absurd to talk about its having a beginning. It is just as absurd to talk about the beginning of the series, as it would be to talk about the beginning of eternal duration, for the supposition is, that they are both eternal: the one is as old as the other. If you affirm that duration is older than the chain, that it stretches further back into the past, then you just affirm that the chain is not infinite. The only difficulty in accounting for the existence of the chain, is in accounting for how the first link comes into existence. If the first link is accounted for, then all the rest of the links are accounted for; because all the rest proceed out of it; but if the chain is infinite, it can have no first link which can require accounting for. The very notion of the existence of a first link, implies that the chain is finite; because the first link is the end of the chain; it stops there—it stretches no further back in duration. If I affirm the existence of an infinite chain, you never can prove me to be in the wrong by urging any absurdity which may be connected with a first link; because an infinite chain can have no such link. The very notion of an infinite chain excludes the conception of a first link.

Now, since all the difficulties in regard to the existence of a chain of causation, are about the existence of its first link, therefore there can be no difficulty about the existence of an infinite chain, because such a chain has no first link.

The logical fallacy lies in a false conception attached to the word *whole*. They say, if each link in the chain was preceded by a cause, then the whole chain was preceded by a cause. The conception which is attached to the word, limits the chain, and consequently changes the question. When you say, "then the whole chain was preceded by a cause," you in thought grasp the chain at both ends; and it is quite true that such a chain must be preceded by a cause, but this does not prove anything in regard to an infinite chain. But if you use the word *whole* in its proper sense, as applied to an infinite chain, you cannot say, "then the whole chain was preceded by a cause." If you do not conceive a beginning to the chain, but conceive it as existing co-equal with eternal duration, you cannot without contradicting yourself, conceive anything *preceding;* for what is co-equal with duration, can have nothing preceding it. And if you do not conceive the chain as co-equal with duration, then any absurdities which you may deduce from your chain, have no relation to an infinite chain.

Much damage has been done to theism by these sort of demonstrations. Clarke's "Demonstration of the Being and Attributes of God," may be taken as a fair specimen of this kind of reasoning. We have first the argument from space, based upon the metaphysical error of assuming the existence of the *thing* from the existence of the *conception*. And then, we have the argument from the existence of matter, based upon another metaphysical error, viz., of mistaking the *subjective reason* of the existence of matter for an *objective cause* of its existence. And, again, we have the argument against the infinite series of dependent beings, based upon a logical fallacy, arising from the ambiguity of the word *whole*. And the result is, Dr. Clarke is extolled as an acute metaphysician, and the conclusion come to is, that there must either be something unsatisfactory in metaphysics itself, or the question of theism is not one which will admit of being treated metaphysically: both conclusions being of course false, the error not being in metaphysics, but in the metaphysician.

IV. THE ARGUMENT MUST START FROM A SOMETHING WHICH INVOLVES THE THREE GREAT METAPHYSICAL PRINCIPLES.

Before we can prove the being of a God, we must have a something which involves the three great fundamental principles of metaphysics, already so often noticed.

The mere existence of matter implies only the first principle, viz., *Substance.*

Change in matter, the first and second—that is, *Substance* and *Cause.* But to prove the existence of God, we must have a something which implies an *Intelligent* Substance, and *First Cause.*

Anything which involves the third principle, also, will do this. We must, therefore, have something more than matter and change; we must have matter and change according to an End—means to an end. This we will find in Organism.

In the formation of an organic body, two things require to be accounted for; the motion of the matter, and its disposition or arrangement. The matter must not only be moved, but moved in a particular determinate manner, in regard to time and space. If a particle of matter, for instance, has to go into any particular place of an organic body, it must move in the particular direction in *space* which will lead to that place; but this is not all, it must stop at the particular moment of *time*, when it comes to the place. What then is the nature of the causation which will account for this? If we find that it must be an Intelligent Personality, then our point is gained. But before we can answer this question properly, we must first observe some things in regard to causation.

CAUSATION.

I. A STATEMENT OF THE PRINCIPLE.

The principle of Causality may be expressed thus: "Everything which comes into existence must have a cause." Or, in other words, "Everything which happens or begins to be must have a cause." Or, in other words still, "Every event must have a cause." It is not so important what terms we may express it in, if we only express intelligibly the idea to be conveyed.

It is necessary to distinguish what is derived *a priori* from the Reason, and what from *experience*. Observe, the principle is not: "Every *thing* must have a cause;" but only, "every thing which *begins to be*, or *comes to pass*, must have a cause." It is not a thing, merely as a thing existing, which requires a cause; but a thing in so far only as it has this predicate attached to it—*that it began to be.* The principle does not say, that this or that must have had a cause; it only says, if this or that began to be, it must have had a cause. Hence the absurdity of the opinion of Lewes, Calderwood, Tappan, and others, that *mere existence* implies a cause.*

Observe, that the Reason does not say anything in regard to the nature of the *thing.* The principle is not "Every *substance,* or every *property,* &c., which begins to be, must have a cause": it pays no regard to the nature of the *thing.* The principle is, "be the thing whatever it may, if it has this predicate attached to it, viz., *that it began to be,* then it must have had a cause." Hence the absurdity of the principle as stated by Tappan, Cousin, and others, viz., "Every *phenomenon* must have a cause."†

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* "The abstract formula of causation is this: 'Every *existence* presupposes some cause of its existence.'"—LEWES' BIOGRAPHICAL HISTORY OF PHILOSOPHY, vol. iv. p. 126.

"The causal judgment consists in the universal necessity of which we are conscious to think a cause *for every existence.*"—CALDERWOOD'S PHILOSOPHY OF THE INFINITE, p. 147.

"The very *existence* of phenomena, independently of their succession, independently of any relation which they hold to each other, demands a cause.—TAPPAN ON THE WILL, p. 175. (British Edition.)

"Phenomena, as *barely existent,* demand causality."—TAPPAN'S LOGIC, p. 167.

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† The fallacy of this definition of the principle of causality, will be best seen by observing the absurdities and contradictions into which it necessarily leads its advocates.

We shall take Professor Tappan as an instance. The principle of causality he affirms is, "every *phenomenon* must have a cause"; and this principle, according to him, is derived from the reason. "This principle is affirmed by reason—it is a first, an intuitive principle."—TREATISE ON THE

To say that the principle of the Reason is, "Every *phenomenon* must have a cause," is assuming that the reason gives the nature of the thing which must have a cause, viz., phenomenon; whereas the principle says nothing at all in regard to this; but affirms, "be

WILL, p. 188. "That 'every phenomenon must have a cause,' is unquestionably one of those primitive truths which neither require nor admit of a demonstration, because they precede all demonstration, and must be assumed as the basis of all demonstration."—*Ibid*, p. 102. And what is the character of intuitive truths of the reason? "Whatever the reason intuitively knows," he asserts, "it knows under the characteristics of Universality and Necessity. Intuitive truths are universal, that is, true *without any exception;* and necessary, that is, *their opposites are impossible.*" —LOGIC, p. 224. There is no ambiguity here about his meaning. He does not simply assert that it holds universally true as an empirical fact, that every phenomenon *has* a cause, but that it holds true as a principle of the reason, that every phenomenon *must* have a cause; and that the opposite is an impossibility. This being his meaning, let us turn over to page 339, and read the following:

"The distinction made between the relation of cause and effect, and the relation of substance and attributes, at first sight may seem to conflict with the principle of causality, that 'every phenomenon implies a cause,' and to require the following modification, viz., 'every phenomenon implies a cause or a substance.'

"This point, however, can be easily adjusted without modifying the principle. If some phenomena directly imply *only substance*, let it be remembered that the *substance itself implies a cause.*" That is, some phenomena imply a cause, only because they happen to be connected with substance which implies a cause, and that the principle, "every *phenomenon* must have a cause," holds universally true, because it has so happened, that those substances which imply no cause, do not happen, as a matter-of-fact, to have any phenomena connected with them. The phenomena, thought, volition, feeling, &c., which I am conscious of, imply a cause, because I, the substance to which these phenomena belong, happen to require a cause, not being eternal. Hence it turns out, in contradiction to what he had formerly stated, that this principle has only an empirical universality, if it even has this; for Mr. Tappan seems to be in doubt about the matter, for he adds: "All phenomena, there-the thing whatever it may, whether Phenomenon or Noumenon, Substance or Property; if it began to be it must have a cause." And if this predicate (beginning to be) is not applicable to it, whether it be Noumenon or Phenomenon, the principle does not give us the least

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fore, *with which we are acquainted*, either directly or indirectly imply causality"; which, of course, implies, at least, that it is possible that there may be phenomena with which we are not acquainted, which may not imply causality. "The thoughts and volitions of the Divine Mind, he further adds, "cannot be phenomena to us, because they cannot come within our consciousness." But if they were brought within our consciousness, a thing not impossible in itself to the Divine Will, then here would be phenomena without a cause, a thing which the reason, according to Mr. Tappan, affirms to be *impossible*.

In the one place, it is asserted that the reason affirms it as a necessary truth, which *must* hold universally true, without the possibility of an exception, that "every phenomenon must have a cause"; but when the matter comes to be investigated, it turns out, that it is only universally true, because it has so happened, as a *matter-of-fact*, that our consciousness do not reach to phenomena which are connected with substances which imply no cause; but that if the sphere of our consciousness were enlarged, so as to reach to the thoughts and volitions of the Divine Mind, we would there find phenomena which implies no cause, and thus prove an *a priori* principle of the reason, as a matter-of-fact, to be false. But Mr. Tappan is not to be outdone, even here, for he replies: "It is to be remarked, likewise, that every manifestation of being to us, depends upon that act of our wills which we denominate attention; and, of course, is in this way connected with causality." But, although in the case of the Divine thoughts and volitions, the act of our wills called attention, might suggest to us the notion of a cause, yet this would not prove that the thoughts and volitions themselves, which were without a cause, had a cause.

Mr. Tappan forgets, that his very attempt to show *how* this principle of the reason holds universally true, is a proof that with him the principle has not a rational or necessary universality, but only an empirical.

Cousin, if his translators have not misrepresented him, falls into the same error of defining the principle to be "every phenomenon must have a cause," —HISTORY OF PHILOSOPHY, (Lecture 19.) or ELEMENTS OF PSYCHOLOGY, chap. iv.

warrant to assert anything whatever in regard to whether it had a cause or not. Phenomenon as phenomenon implies Noumenon, not cause.*

When we affirm that "every thing which begins to be, or comes into existence, must have a cause," we must use the word, "thing" in its widest sense, as contradistinguished from non-entity or nothing.

The same is the case in regard to the words, "to be," "existence," &c. When, for example, we assert the principle to be, "every thing which comes into *existence*, or *to be*, must have a cause;" we do not mean by the terms "existence," "to be," &c., "every thing which comes into existence, or begins to be, as a substance or as a property, &c. must have a cause." The meaning which we must attach to the words "existence," "to be," &c., is determined by the nature of the *thing*. If the thing produced is a substance, then its beginning to be must be as a substance—if a property, then its beginning to be must be as a property. The principle implies nothing more under these terms, than the time condition, viz., beginning to be as regards time—happening—coming to pass.

And what holds true in regard to the terms "thing,"

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* Kant would not say, Noumenon requires a cause. Not, however, because if it began to be, it would not require a cause, but because beginning to be could not be predicated of it; for beginning to be is a condition of time. But time, with him, is a form of the sensibility, in relation to phenomenon only; hence, beginning to be, with him, can have no application beyond phenomenon, and, consequently, the principle of causality can, as matter of fact, extend no further.

But still, Kant would not say that the *a priori* principle, is: Every *phenomenon* must have a cause; but phenomenon, in so far as its *beginning to be* is concerned, must have a cause.

"to be," "existence," &c., holds also true in regard to the term "*Cause*." The principle asserts nothing whatever in regard to the nature of the cause, which it is said every event or thing which begins to be must have.

It is specially important to observe this, since a great part of the confusion which prevails at present in metaphysics can be traced to this source.

The reason does not directly give us the least insight into the nature of the cause; all that the reason affirms, in as far as this principle is concerned, is, that "every thing which begins to be, or happens, must have had a *something* preceding, without which it would not have happened or begun to be." This something, be what it may, we call the cause. What this something may be, must be found out by some other means. The nature of this something is not included in the principle; all that is included is, the fact that there must be a something: whether this something be a force, an act, an effort, or will, or whatever else, must be found out by other means. What this something in any particular instance may be, must be learned from the nature of the effect, the "thing;" that is, the nature of the cause must always agree with the nature of the effect, the "thing" produced; but more of this afterwards.

This being the case, the assertion made by Tappan and others, that "there is no cause but will,"* is rash and unwarrantable. For even supposing that it were the case, (a thing which it is not, as will yet be shown), we never could be warranted to make such an assertion. The reason asserts, *a priori*, that in the immeasurable universe, every event must have a cause;

* Treatise on the Will, pp. 338, 320, 111. Logic, p. 69.

but if reason does not tell us, a priori, anything in regard to what all causes must be, we are not warranted to affirm that will is the only cause; forthis would be asserting that we empirically knew all the causes which were in the universe.

II. WHAT IS A PRIORI IN THE PRINCIPLE.

1ST. ITS NECESSITY AND UNIVERSALITY.

In the proposition, "every event must have a cause," the real parts derived from the reason are the words, "every" and "must," or in other words, its universality and necessity. But there are other elements given, a priori, by the reason, which seem to be overlooked by all metaphysicians.

2ND. THE CAUSE MUST PRECEDE THE EFFECT.

It will be observed, that we said, that the reason affirms that "every thing which begins to be, or happens, must have had a something *preceding*, without which it would not have happened." Now the reason not only says, that the event must have had a *something*, a cause, but that this something must have *preceded* the event.

The precedence of the cause to the effect is given a priori, for we affirm with the utmost certainty, that the cause *must* precede the effect. No amount of reasoning could ever convince us, that the event came into existence before its cause. The axiom, "If something now is, then something must have always been," depends upon the precedence of the cause to the effect, being derived a priori from the reason. For if the reason does not tell us that the cause *must* precede the event, then the universe might have been produced by a cause which succeeded it in time; for unless it be given us, a priori, that the cause *must* precede the event, there is no necessity for us assuming that the cause of the universe must have existed before it; and if we cannot say that the cause of the universe must have preceded the universe, then it does not hold true as an axiom, that "if something now is, something must have always been."

If an event were to happen without any thing antecedent to it, we would rather say that it happened without a cause, than attribute it to a something which had no existence at the time of the event, which shows that the precedence of the cause to the effect is felt to be as necessary, and to hold as universally true, as the very existence of the cause itself.

3RD. THE CAUSE MUST IMMEDIATELY PRECEDE THE EFFECT IN TIME.

But further, the reason not only affirms that the cause must precede the event in time, but it affirms that it must precede it *immediately*. No one could be made to believe that an event was produced by a cause which was out of existence, even a single moment before the event began to take place. We would as soon believe that the event happened without a cause, as attribute it to such a cause. Hence the origin of the axiom, "a thing cannot act *when* it is not."

There has however been a division among philosophers in regard to whether the cause precedes the effect or not; one party maintaining that it does, while another, among whom are Herschel, Cairns, &c., maintaining that the cause and the effect must exist simultaneously. But had the facts which we have been considering been properly observed, this controversy never would have arisen, for it would have been found that both parties were in the right in what they asserted. For it is true that the cause must both precede the effect and co-exist with it also.

We have just noticed, that the cause must be present in time when the effect takes place; that the effect cannot take place after the cause is gone; the cause must be in existence at the time the effect is being produced. But it is evident, also, that it must have been in existence prior to this; for, if it did not exist prior to the effect, it must have come into existence along with the effect, and if it is said that it came into existence along with the effect, it must have been the effect of something else which existed at the time. It matters not how many steps we may go back, we must come to a cause which existed before the effect. The effect succeeds the influence of the cause in time; but not by any distance or lapse of time: there is no time intervening between them; the two moments, as it were, touch each other. *

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* "Here it must be specially remembered, that we must consider the *order* of time, and not the *lapse* thereof. The relation remains, even though no time has elapsed. The time between the causality of the cause and its immediate effect may entirely vanish, and the cause and the effect be thus simultaneous, but the relation of the one to the other remains always determinable according to time."—KANT'S CRITIQUE OF PURE REASON, p. 151, (Bohn's edition.)

4TH. THE CAUSE MUST BE PRESENT TO THE EFFECT IN SPACE.

It is equally evident, a priori, that the cause must be present in space to the effect. This, however, is denied by many philosophers; but like all other a priori truths which we find denied, as we shall yet have occasion to notice, it is first misunderstood before it is denied.

If we hold a magnet at some distance from a piece of iron, instantly the iron begins to move towards the magnet; but do we believe that the magnet causes the iron to move without presence in space? No. We cannot avoid believing in a medium. We say that the magnet moves the iron by an unknown something which we are pleased to call a *force*, an *influence*, an *attraction*; we cannot avoid this. When we speak of the magnet *attracting* the iron, or the moon raising the water of the ocean, by the *force* of *gravity*, we mean something more than the simple fact, that when the moon is within 240,000 miles of the earth, the water rises; or the magnet within a few inches, the iron moves. You tell us they act. Yes; but do you mean to believe that an action confined to a spot 240,000 miles distant is the cause of the water rising here? No; you believe that the action of the moon *extends* to the water of the ocean. But, what is the idea which you attach to the terms, "*the action of the moon extends to the water of the ocean*"? Your meaning is, you attribute the rising of the waters to a cause 240,000 miles distant; but the a priori principle which we have just noticed, prevents you from being satisfied with this simple explanation; hence you assume the existence of a something which you call an influence, an attraction, a force, belonging to the moon, which *extends* to the earth. Let us do what we may, when we speak of the "*attraction of gravity*," we mean the unseen entity intervening which produces the motion. True, the mathematician has nothing to do with this explanation of gravity; for the mathematician has nothing to do with gravity as an Efficient Cause—he has only to do with the effects which take place, or the causes, simply as relations in space and time. But when we want to get the efficient cause of the waters rising, nothing will satisfy us but an unseen entity which intervenes.*

Thus we have the philosophical explanation of the universal belief in the existence of these unseen causes, designated Force, Gravity, Attraction, Repulsion, &c. And also, the origin of the old self-evident, though, at present, much derided maxim, "A thing cannot act *where* it is not."

Thus we have the philosophical explanation of the origin of these four ancient maxims, which have been received as self-evident, by unsophisticated minds in all ages,—each of these a priori elements giving rise to a separate maxim.

"1st. Its necessity and universality,"—giving rise to the maxim, "Out of nothing, nothing can arise," or to express it in better terms, "Every event must have a cause."

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* "Nature abhors a vacuum. This intense and far-reaching affirmation of the ancient mind has long enough been the stale jest of superficial lecturers. It is, however, some satisfaction to know that the best modern science is slowly but surely coming round to it again."—BIBLIOTHECA SACRA, for 1851, p. 348.

"2nd. The cause must precede the effect,"—giving rise to the maxim, "If something now is, then something must have always been."

"3rd. The cause must immediately precede the effect in time,"—giving rise to the maxim, "A thing cannot act *when* it is not."

"4th, The cause must be present to the effect in space,"—giving rise to the maxim, "A thing cannot act *where* it is not."

III. THE ORIGIN OF THE BELIEF THAT CAUSE MUST BE A SOMETHING UNSEEN.

Here, also, we have the orgin of the almost universal error which prevails, that cause must be a something unseen—a something not cognizable by the senses. The principle which we have been considering, obliges us to believe in the existence of a something between the magnet and the iron, to account for the motion of the latter; this something we call influence, force, attraction, gravity, &c. The iron moves; we know that the immediate cause cannot be the magnet, for it is not present in space. It must then be moved, we say, by means of an influence or force proceeding from the magnet. The magnet does not account for the motion, not being present in space; hence we are obliged to believe in the existence of a something in addition to the magnet, to which we give the names, Force, &c. This something, we call the cause of the motion of the iron. But men will not stop here. Because the cause in this and similar instances happens to be a something unseen—

not detectable by the senses—they jump at the conclusion that all causes are unseen, that a cause must be a something unseen, and that all changes must be produced by these unseen entities. They imagine that the thing immediately antecedent, which is detectable by the senses, cannot be the cause, but that the cause is an unseen something or entity, intervening between them.

The principle of causality, as we have already seen, does not warrant us to affirm anything whatever in regard to the nature of cause; the Reason only says, there must be a something antecedent to the effect, not that this something must be a something *unseen.* Hence we have no warrant to assume the existence of causes not cognizable to the senses, except in instances similar to those already mentioned. Our warrant in these arises from the principle that a cause must be present in space to the effect; and here nothing detectable by the senses being present, hence the Reason warrants us to assume that, since nothing seen is present, something unseen *must* be present. Nothing whatever is said in regard to the *nature* of this something; all that is affirmed is, that there *is* a something. But when a sensible cause is present, the Reason gives us no authority to assume an unseen one. But we must hasten to consider another fruitful source of error and confusion, namely, the notion of a positive bond or link necessarily uniting the cause to the effect.

IV. THE BOND OF CONNEXION.

The common notion seems to be this: because it is impossible that an effect can happen without a cause, it is assumed that there must, therefore, be some positive indissoluble bond or link of connexion which necessarily unites them together. Hence we hear men saying that all that is cognizable by the senses, is simply the antecedent and the consequent; the *indissoluble bond* which unites them, they tell us, eludes the senses, but is made known by the Reason. That this bond is a mere illusion arising out of a confusion of ideas, I trust will soon be made evident.

It does not follow that because an effect cannot arise without a cause, the effect is necessarily bound to the cause by a connecting link.

It may be impossible that the effect A should arise without a cause; but it is conceivable that it may be produced either by the cause B, or by the cause C. In this case, there could be no indissoluble bond, for here the effect follows though either one of the two is absent.

But to go further, it may be impossible that the effect A could arise without the cause B, and still there might be no necessary bond of connexion existing between the two. It can be easily explained how the effect A must necessarily follow the cause B, without conceiving it to arise from any bond or link of connexion. There no doubt is a bond of connexion, that is, there is a something in the cause B, which is the reason why the particular effect A follows rather than another; but it is not this something, be it observed, which is the reason why the effect A *necessarily* follows the cause B; for the necessity would remain the same though this bond or something were dissoluble by the smallest force conceivable.

The fact is, this something in the cause B, which is the reason of the particular effect A arising, has nothing whatever to do with the reason of our affirming that it is impossible that the effect A could have arisen without the cause B.

The reason gives it a priori, that no effect can arise without a cause; but it does not show us how this comes to be the case. It does not tell us that an effect cannot arise without a cause, because there is a tie or link which indissolubly unites a cause to it. The Reason says no such thing. The fact that it must have a cause is given; but not the *reason why* it is so. This being the case, it does not require any force or bond to prevent an effect arising without a cause, *the bare absence* of the cause is all that is required to make it impossible. The mere absence of the cause will just as effectually secure the non-existence of the effect, as though all the forces in the universe were exerted to prevent its existence.

And again, when we see a certain kind of effect, preceded by a certain cause, we may be assured that the *bare absence* of any cause to change the effect, will as really prevent the effect changing as though there were a bond of infinite strength binding the same effect to the same cause. When we observe the effect A following the cause B, we know that the *simple absence* of any cause to *change* the effect into C, or into any other kind of effect, will as necessarily secure its always continuing to be A, as though the Almighty were to bind the two together by a link or bond of infinite strength. Why are we so confident? Simply, because to suppose it to change from A into C, or any other form, without any cause, runs counter to the principle of causality—that every effect or change which takes place must have a cause.

An objector will reply: If this is all, and there be no tie, the cause B may change its effect into C, or D, or some other form, and here would be a different effect arising from the same cause B. Answer: If we conceive the effect A changing into C, we must conceive some change taking place in the cause B, either in its substance or manner of acting, or in something else, at the time when the effect *changed* from A into C; or else the reason immediately revolts and affirms that there is nothing which accounts for the change taking place, or taking place at the time when it did take place, instead of sooner or later. And if you suppose any variation in B, in any respect whatever, then it is not simply B as it was when A was the effect, but B with this something *b*, or whatever else added to it, so that the effect C does not arise from the cause B, but from one entirely different, viz., *Bb*. So that do as we may, we never can conceive that the effect A can ever be separated from the cause B, and yet there is no necessary bond of connexion.

Thus the simple impossibility which we conceive, that a change should happen without a cause, is the sum and substance of all the necessity which we know of, which exists between the cause and the effect. But this is quite enough. What could be more certain than this? Suppose that all the forces in the universe were exerted to bind the two together, could we then affirm that the connexion was more sure and indissoluble. No: our conviction would not even be so strong, for it would be conceivable that some superior power might yet arise and break the tie and thus separate them.

When a body, for instance, is moving in void space, the *mere absence* of a cause to turn it aside, will make us as certain, and more so, that it will keep the straight road, than though it were hemmed in on every side by walls of adamant.

But although the impossibility that an effect should happen without a cause is the sole reason of this necessary connexion, still I do not deny, as was noticed before, that there may be a something in the cause which really would prevent any other effect from following. There may be some real positive connexion; the one may be linked into the other so as to prevent or oppose any force from separating them. This may or may not be the case. This I neither affirm nor deny, only it has nothing to do with the reason on which our a priori judgment regarding their necessary connexion is founded.

There may be a positive link of connexion uniting the two together, which experience would detect, had we the proper faculties, but whether this be the case or not, it makes no alteration whatever in regard to our a priori judgment.

V. THE IDEA OF POWER.

But it will be asked, is there nothing more in cause and effect than the antecedent and consequent,—is there not a power* in the antecedent to produce the consequent? Before we can answer this question, we will require to settle first what we mean by power.

When we attribute a change to something absent in space, the reason refuses to accept this something as the cause; not, however, because of any thing in the nature of the absent thing, but because it is not present. And if nothing else is present to account for the change, we are therefore obliged to infer a something unseen: although not anything in regard to its nature. This something, which the reason demands us to assume the existence of, in cases where the antecedents are absent, cannot be what we call power; for power is a something which is said to be always in the cause, whether it be present or absent to the effect. It is a something which is required not simply to account for a change taking place at a distance, such as the moon causing the water of the ocean to rise, but a something which is considered to be necessary, even though the one body should cause the other to move by contact. In the one case we have to assume the existence of a something called attraction, gravity, &c., but this cannot be what we mean by power, for in the other case this is not required in order to account for the change; but yet, here, we affirm that the one body is moved by a *power* in the other.

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* Mr. G. H. Lewes in his Biographical History of Philosophy,—a work written seemingly for the purpose of undermining metaphysics, and showing that the positivism of Comte is the only true philosophy,—writes thus: "Fire, when placed in contact with paper, produces a change. * * * We only perceive the change; but from that, we infer the *power*. *Just as we only perceive attributes, but therefrom infer substance.*" vol. iv. p. 49. That is, from the change which we experience, we infer the existence of the unseen metaphysical entity, called *power!* just as, from the attributes which we experience, we infer the metaphysical something called *substance* or *substratum!* How he can maintain his consistency as a positive philosopher, and speak thus, we know not.

What then is this power which moves, or by virtue of which the antecedent produces the consequent? The common opinion is, that we derive the notion of power from our consciousness when acting. The effort or nisus of the will, of which we are conscious, when we move any part of our body, suggests to us, it is affirmed, the idea of power. Well, it suggests to us the idea of power; but the question still recurs, what is this power, the idea of which is suggested? We know what the effect or nisus is, by refering to our consciousness when making a volition to lift the arm, for instance. But this nisus or effort cannot be what we mean by power, for this nisus is an effect of the will, and in the very production of it we must conceive the will to have the *power* of producing it; therefore, the nisus cannot be this power, for it is but the effect of *power*. Power is not the nisus, but that in the will by which it produces the nisus: we say the will has the power of producing its nisus. What then is power? What then is this *power* in the will, by virtue of which it produces its nisus? We never can know what it is from consciousness. Consciousness only exhibits to us the operations of the will, but not the will itself; nor that in the will, by virtue of which the operations take place. These lie beyond the reach of consciousness. Hence the question is Ontological. Now if ontology is an impossible science, then the question, What is power is unanswerable? We shall not therefore follow the question, "*What is* power?" any further; but try to find out why we assert *that there is* such a thing. We shall not trouble ourselves with the *nature* of its existence, but will be contented if we arrive at the knowledge of the fact of its existence. The question now is, How do we know that it exists? Not from consciousness, for it is noumenon, not phenomenon. If known, it must therefore be by the reason. And if from the reason, it must be derived directly in the shape of a principle, or indirectly as an inference from a principle. The most common opinion on this point is, that it is known directly by the reason; that is, that when we view a cause producing an effect, we directly conceive the existence of a something, which we call power in the cause to produce the effect. But I think it can be shown that it is not *directly conceived*, but *indirectly inferred.* If the reason directly conceives the existence of power, it must do so in the shape of a principle to that effect; that is, when we perceive a cause producing an effect, we must have a principle to enable us to affirm that there is power. We would then have a principle of the reason, "Every cause must have a power."

But it is a violation of the law of parsimony to assume a principle of the reason for the express purpose, if we can equally well account for it by means of other principles which it already has.

I think it will not be difficult to show that our belief in the existence of power is derived from the principle of causality—that it is a logical inference from the principle, that "every effect must have a cause."

VI. THE EXISTENCE OF POWER—AN INFERENCE FROM THE PRINCIPLE OF CAUSALITY.

We found, that the notion of a positive link necessarily binding the effect to the cause was without foundation—that the necessary connexion could be easily accounted for by means of the principle of causality without supposing any link. By a logical inference of a similar kind, the Reason arrives at the knowledge of the existence of power.

When we speak of lifting the arm by an effort, or an exertion of power, our meaning is, that our Will does not do it directly, but that in lifting the arm we make a volition or effort to accomplish it. Will, then, is cause—the nisus or effort, the effect. But there is more than this: we conceive that this nisus is caused by a *power* in the will. The mere will itself, as an existence, and nothing else, does not satisfactorily account for the existence of the nisus. There is, in addition to all this, the conception of a something, which we call a power, in the will. The very same is the case in regard to every other cause. Whenever an effect takes place, the mind conceives, or rather there is suggested to the mind, the idea of a something in the cause which we term power; a something which never would have been suggested to the mind had not the effect happened. Several writers, such as Tappan, Day, &c., maintain, that between the cause and the effect—between will and the nisus or volition, nothing intervenes; but this is not correct. It is quite true, that between the will and the nisus there is no nisus; but the mere will, as it exists without the additional conception or idea of a something we call power, would never account for the existence of the nisus. Suppose we perceived the Will as it really exists, and then, for the first time, observed a nisus arising: instantly, a something would be suggested to our minds, as connected with the will, which was not included in our first conceptions of it. So universal is this conviction, that the positive philosophers themselves, as we have already seen, are obliged, in opposition to their system, to acknowledge the existence of this metaphysical entity called power.

The problem which belongs to us, is to show how this conviction arises as an inference from the principle that "every effect must have a cause."

When the will produces a nisus or volition, we know that at the time the volition was produced, there must have been something more than the mere will as it simply exists; for the will as an existing faculty is the same at one moment as at another. There is no diversity except in its action, or in so far as it acts or is active. As a simple existing faculty, apart from its activity, it is the same without variation. Now, to suppose a nisus or any effect to arise from such a state, would imply an effect without a cause; for there would be no cause why the nisus arose at that particular time rather than at any other. The will, as a simple existence, may be supposed to account for the mere existence of the nisus, but not for its existence at that particular time rather than at another; for everything in the will which we could assign as the cause of the nisus existing at that particular moment, would be equally a cause for its existing at any other time, and the question what caused it to arise at that particular moment, instead of any time, either sooner or later, would still be unanswered.

To say that it had the power of producing the nisus at that particular time, is no answer, unless it is meant that it had not the power at any other time; for if the power was the same at other times, the question recurs, what caused the nisus to arise at that particular time? So, do as we may, when a nisus or effect takes place, there must always be a something more conceived as connected with the will, than the mere faculty as it simply exists; or else something comes to pass for which there is no cause, viz., the happening of the effect at that time rather than at another time.

The very same reasoning holds true in regard to every antecedent which we can conceive as a cause—something more than the mere antecedent thing as it exists is required, or else the happening of the effect at the time at which it did happen is without a cause: but the mind cannot come to this conclusion, hence we always conceive a something in addition to the mere antecedent. Here I think is the origin of the idea of power; beyond this we can conceive nothing more essential to the existence of the effect. Power is not an effort or nisus; but simply the capability of the antecedent to produce the effort, or whatever else may be the consequent. Now nothing more can we conceive of, as necessary, than the antecedent as it exists, and this something which the mind logically demands to account for the effect taking place at the time at which it does take place.

To talk of something more in the cause, such as *action* or *effort*, is absurd; for the thing we are in search of is, what is required in the cause to produce the effort or action. The effort or action is the effect, and the question is, what is this something which we call power, which is felt to be necessary to the production of the effort or action?

Effort or action is not an essential element in cause. It is the effect of cause, and pre-supposes both the existence of an antecedent, and power to account for its existence. Having got quit of the confusion arising from supposing action or effort as essential to cause itself, we easily perceive that all that is required, is simply the antecedent and the something which accounts for the effect taking place at the time when it does take place. The mind not accustomed to think deeply on the subject, is always apt to fall into the confusion of supposing that action or effort is an essential element in cause, as cause; forgetting that action or effort is itself an effect.

VII. SUPPOSED EXCEPTIONS TO THE PRINCIPLE OF CAUSALITY.

Mr. John S. Mill tries to show that the principle of causality does not hold necessarily and universally true, but he manages to do this by first misunderstanding the principle.

In his Logic, vol. ii. p. 395, he states the principle of causality to be "The universal truth, that every event which has a beginning has a cause." But when he attempts to show that the principle is not necessarily true, he changes it into one entirely different, viz., the following: "The *uniformity* in the succession of events, otherwise called the law of causation," vol. ii. p. 118. "Causation, in our view of the subject, not being fundamentally different from *order* in time," vol. i. p. 155. We have no objection whatever to him taking this view of causation, or to him calling the uniformity, the law or principle of causation, should he prefer to do so; but we have good reason to object, when he is to prove that the law of causation which we hold, viz., "Every event which has a beginning has a cause," does not hold necessarily true, to substitute this notion of the law of causation in place of it.

The following are his proofs that the principle of causality is not necessarily and universally true.

"I am convinced that any one accustomed to abstraction and analysis, who will fairly exert his faculties for the purpose, will, when his imagination has once learned to entertain the notion, find no difficulty in conceiving, that in some one, for instance, of the many firmaments into which sidereal astronomy now divides the universe, events may succeed one another at random, without any fixed law; nor can anything in our experience, or in our mental nature, constitute a sufficient, or indeed any, reason for believing that this is nowhere the case. The grounds, therefore, which warrant us in rejecting such a supposition, with respect to any of the phenomena of which we have experience, must be sought elsewhere than in any supposed necessity of our intellectual faculties."—Vol. ii. p. 110.

Here it is assumed that the a priori principle of the intelligence is, that events must succeed each other according to a uniform law. But such is not the case.

The metaphysicians he refers to, do not affirm that it is given, a priori, that all events in the universe must happen according to law; they only affirm that all events in the universe must have a cause. We can easily conceive that, in some corner of the universe, events may be happening without law; but no one can conceive, no not even Mr. Mill himself, as we shall shortly find, that there are events happening without causes.

The thing which it became him to prove was, that, in some of these firmaments, events may be conceived to be happening without anything antecedent as a cause; but the thing which he shows is what no one ever disputed, viz., that we may conceive that causes may there act without uniformity—that events may happen at random. That events must have causes, is an affirmation of the reason; but that these causes should act uniformly, is a question of experience, which no intelligent philosopher of the a priori school ever maintained must hold universally true.

And again. "Finally, there is one class of phenomena which, even in our day, at least one half of the speculative world do not admit to be governed by causes. I mean," he says, "human volitions. These are believed by the metaphysicians who espouse the free-will doctrine, to be self-determined, self-*caused;* that is, not caused by anything external to themselves, not determined by any prior fact."

Here it is affirmed that the one half of the speculative world hold that volitions are self-determined, self-caused. So far from this being the case, I very much doubt if Mr. Mill would find, in all the speculative world, half a dozen who hold any such absurdity. Free willers maintain, that volitions are acts of the will, and that it is the will which determines them. I have never yet seen or heard of a free willer who holds that volitions produce themselves—are self-caused. But even supposing that free-willers did hold the absurd notion, that volitions *caused* themselves, this would not prove that they believed that events might happen without causes,—the only thing which can serve Mr. Mill's present purpose,—but the reverse. It would prove that, rather than believe that volitions could happen without causes, they believed that they caused themselves.

Mr. G. H. Lewes, in his Biographical History of Philosophy, vol. iv. p. 49, following Mr. Mill, falls into the same error, when attemping to show that there are exceptions to the principle of causality.

"Nay, to leave ordinary men, and to confine ourselves to philosophers; amongst them we shall find that, with respect to one class of phenomena, more than one-half of the thinking world is firmly convinced that every effect does not imply a cause: the class of phenomena referred to, are those of human volitions. All those who espouse the doctrine of freedom of will, declare, that all our volitions are self-*caused*—that is to say, our volitions are not caused by anything external to themselves, not determined by any prior fact." But they are *caused* by something in themselves?

We may lay it down as a general rule, that, before an *a priori* truth can be denied, it must be first misunderstood. And as a proof that these men, when off their guard, will contradict themselves, and acknowledge the universality of the principle of causality, take the following:

"The only law of nature which affords sufficient warrant for attributing IMPOSSIBILITY, are, first, those of number and extension, which are paramount to the laws of the succession of phenomena, and not exposed to the agency of counteracting forces; and secondly, the UNIVERSAL LAW OF CAUSALITY ITSELF."—*Mill's Logic*, vol. ii. p. 413.

"It is a UNIVERSAL truth, that every fact which has a beginning has a cause."—*Ibid*, vol. i. p. 395.

VIII. THE OBJECTIVE VALIDITY OF THE PRINCIPLE.

There is one aspect of the question we have not yet touched upon, that is, the objective validity of the principle. We have found that it is a principle of the reason, that every event must have a cause, and that the cause must be present in time and space; but the transcendental question arises, does these principles hold objectively true in the world of reality.

The reason affirms that every event, that is, every event in the external objective world of reality, must have a cause; and what we want, is a criterion to determine if the reason asserts the truth.

Kant's exposition on this point, although much prized in some quarters, is nevertheless most unsatisfactory. The principle with him is entirely subjective; for the very objects themselves, to which the principle is applied, are subjective. True, he speaks of the principle holding objectively true, but the objective with him, be it observed, are phenomena, and phenomena with him are subjective. Time with him, and consequently beginning to be, are subjective. The things which are in time (phenomena) are subjective, and the principle of causality is nothing more than the order in which the mind or subject places the ideal things, in ideal time. These ideal things, although nothing in themselves, may be considered, as objects of thought, to be objective (for thought must always have an object) and in this sense, Kant's law may be considered as objectively true.

But if time and space, and the objects which are in them, have a real existence apart from the subject, then all that Kant has stated in regard to the objective validity of the principle, must go for nothing.

How then can we prove the objective validity of the principle? In no other way than that laid down by Dr. Reid. The Scottish school only can offer a solution of this problem. The solution is simply this: *It is an ultimate law of our intelligence, to think that it is so.* There can be no criterion of reality beyond this—beyond this all is, and must for ever remain, in impenetrable darkness; but beyond this, scepticism becomes unreasonable. The last witness must be taken on trust. He asserts that before him stands the naked reality—you suspect that the object is ideal, not real, and wish to send another witness to test the matter; but you are no better, you have just as good grounds to question him as you had the other.

Thought or the intelligence asserts, that beyond it there is an existence: nearer to the existence we cannot possibly get; for if we go beyond thought, in order to look at the reality, all is darkness and unconsciousness.

The only point where scepticism is reasonable, is, whether the reality, in the particular instance, is attested by an ultimate law of thought: but here the Scottish school partly fails. The Scottish Philosopher, when questioned here, becomes rather dogmatical. He asserts that it is an ultimate law of thought, because he is conscious he cannot but think, that every effect in the external world must have a cause. This is a criterion, but not in every case a safe one; for we have seen, that people often cannot think a thing different, and yet they are wrong; which shows, that inability to think differently may arise without a fundamental law. There is another mistake into which the Scottish Philosopher is apt to fall, that is, the mistake of supposing that he is conscious that a thing is true, when he is only conscious of having the *conviction* that the thing is true. In the former case, his consciousness would be a sufficient guarantee for the truth of the thing; but in the latter case, all that the consciousness warrants us to affirm, is the reality of the *conviction;* but whether the conviction is true or false,—whether it rests upon a fundamental law, or merely acquired from habit, is left undetermined. Hence the grand desideratum in philosophy, is a metaphysical examination of the human mind, in order to determine what are its ultimate a priori principles and laws of belief. The Scottish Psychology, when separated from metaphysics, becomes useless and unsatisfactory. But further in this direction, at present, we shall not proceed.

PROOF FOR THE BEING OF A GOD FROM ORGANISM.

I. INTRODUCTORY.

To return to the question of the cause of organic arrangement. We observed that in the formation of an organic body, two things require to be accounted for—the motion of the matter, and its disposition or arrangement in regard to time and space. We observed that if a particle of matter, for instance, has to be placed in any particular place of an organic body, it must move in the particular direction in *space* which will lead to that place, and stop at the particular moment of *time* when it comes to it. Hence the problem to be solved is, to find out (1) the cause of the motion, and (2) the cause of the determination of the motion in regard to time and space.

(1)

II. THE CAUSE OF THE MOTION.

Whatever the cause of the motion may be, one thing is evident, the cause must produce the motion by an *act—by action.*

We showed that action is not essential to cause, simply as cause, for action is an effect itself, and implies a cause also; and to suppose that the cause of action must cause action by acting, is absurd; for the very act, which caused the other act, would itself require an antecedent act, and so on to infinity. But although cause, as cause, does not necessarily imply action, yet the cause of motion in a body necessarily implies it.

It is inconceivable, that any cause could produce motion in a body without action. Of course the mere inconceivability of the thing, is not sufficient proof of the absolute impossibility of the thing. But this point is so universally admitted, that I shall not dwell on the proof, but take it for granted that the point will never be disputed.

To say, that matter must be made to move by a force, is a very different thing, unless we use the term force as synonymous with action; but the term force as applied to gravity, attraction, repulsion, &c., implies more than action, it implies action by an unseen cause. Force, when used in the sense of attraction, &c., not only implies action, but the existence of an unseen thing which acts. Hence it is not necessary that matter should be moved by a force; but it is absolutely necessary that it be moved by action.

(2)

III. THE CAUSE OF THE DETERMINATION OF THE MOTION.

Although the motion is *produced* by action, yet it is impossible that it can be *determined* by action.

It is the particular determination of the action, which gives the particular determination to the motion. If the cause acts in any particular direction in regard to space, the motion will take that direction; or, if it acts at any particular time, the motion will take place at that particular time. Hence that which determines the action of the cause, determines the motion. Hence the problem is, *what determines the action of the cause?*

That the action of the cause cannot be determined by action is demonstrable thus. If the action of the cause is determined by an act, then this determining act must itself be determined by a preceding act, and this preceding act by another, and so on in like manner to infinity. This is evident; for if the act which determines the act of the cause exist at all, it must exist in time and space, and if it exist in time and space, its existence must have a determination in regard to time and space.

The particular direction of motion in the body depended upon the particular direction of the action of the cause; now the question is, what gave the act of the cause this particular direction? If it be replied that it was another act, then this act, in order to give the determining act the proper direction, must itself be previously properly determined, and the question again recurs, what gave this act the proper determination? If by an act, it must be by an act which was properly determined; and if so, then there must have been another act preceding it, which gave it the proper determination, and so on to infinity. The reason of all this is perfectly obvious. When you account for the determination of an act, by assigning an act, you account for it by means of a something which requires itself to be accounted for in a similar manner.

To make the matter still more plain; suppose that an act A has happened. It has not only happened, but it has happened at a particular time and in a particular place; that is to say, the act not only got *existence*, but a particular *determined* existence. There are therefore two things which require to be accounted for, 1st, the mere happening of the act—its simple production; and 2dly, why this particular act A instead of B, C, or any other possible act; and why it happened at this particular time and place, rather than at some other. That is, we have to explain, 1st, its *production;* 2dly, its *determination.* For example, in the motion of a body we have to account, 1st, for the production of the simple motion; and 2dly, for its taking place at the particular time and in the particular direction. In other words, we have to find out not only that which *caused* or *produced* the motion, but that which *determined* it, viz., gave it the particular determination in regard to time and space. The very same is the case in regard to the act A: we have to find a cause for its *production*, and also for its *determination.* Now what we are enquiring after at present, is not what *produced* the act A, but what *determined* it; that is, what caused the particular act A to happen rather than B, C, or any other act, or to happen rather than not. Now it is evident that whatever this cause may have been, it was not an *act;* for let us suppose that the act A was determined to happen rather than not by an act B, then this act B itself requires to be accounted for in a similar manner; for if the act B happened, it must have happened rather than not, and if so, we must ask what determined the act B—what caused it to happen as it did rather than otherwise. And if you say that it was by an act C, you involve yourself in a similar manner, and so on in like manner, *ad-infinitum.*

But even supposing we were to maintain, that the determination of the act A was caused by acts beyond acts, on *ad-infinitum,* it would not help the matter the least; for, on looking at the matter more closely, we find that it is not the determining act B which determined the act A, but the *determination* of the determining act B. We find, that if this determining act B had not been itself determined to happen, the act A determined by it would not have happened; so its happening rather than not, depended upon the act C, which determined the determining act B. And again, on looking more closely, we find that it did not depend upon this act either, but upon its determination. And even supposing we were in this manner to go back to infinity, still it would not be the antecedent act, which determined the consequent act, but the *determination* of the antecedant act; so that, after all, by no possible means can we even conceive determination to be the result of an act; so that be the cause of the determination of motion what it may, it cannot possibly be an act.

We have thus so far settled the question regarding the cause of organization. We have found, that the cause of the motion of the matter of which it is composed, is an *act,* something which acts; and also, that the cause of the determination of the motion is *not an act.* Hence the causes are radically distinct in their natures.

Hence also, all those hypotheses devised to explain the arrangement and disposition of organic matter, by referring it to forces, call it vital force, vital action, organic forces, or whatever else, are not only as a matter of fact false, but must of necessity be so.

This argument, though never applied to this subject before, is however not new or original. Any one acquainted with the free-will controversy, will at once recognize it as the celebrated argument used by President Edwards, to prove the impossibility of a self-determining power in the will.*

IV. AN EXAMINATION OF PROFESSOR TAPPAN'S ANSWER TO THE ARGUMENT.

Professor Tappan, an American metaphysician, who misunderstood Edwards, imagines that he has completely overturned the argument in the following manner:

Will is cause, says Professor Tappan, and the volition or nisus the effect: between the cause and the effect nothing intervenes. The will therefore produces volitions directly without any volition or causative act; hence the doctrine, that the will produces its acts by means of an act, is false.

Had the great transatlantic divine been alive, he would have replied: It is quite true, Mr. Tappan, that the will *produces* its own volitions or actions directly without any act, but although this is the case (a thing which I never denied) it does not therefore follow as a consequence, that, if the will *determines* its own acts, it does so without an act. There is a mighty difference between the *determination* of a thing, and the *production* of a thing; and although no act may be required for the latter, yet it may be for the former. A volition or nisus must not only have existence, but it must have existence in a particular time, if not in a particular space; it must at least have a determination in regard to time. Now although the will might have *produced* the volition—given it bare existence—still the question regarding its determination remains untouched, viz., what caused the will to produce the volition, rather than not produce it; or to produce it at the time when it did produce it, rather than at some other time? or in other words, what *determined* the will? Now, although the will may produce the former directly, without any antecedent act, yet even according to your own opinion, as we shall immediately see, it could not produce the latter (viz., determine itself) without an antecedent act.

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* Should the reader fail in perceiving the force of the above reasoning, before proceeding farther, he should carefully re-study the section; for, if he is not convinced of the absolute impossibility of determination by an act, he will also fail in perceiving the force of the argument which follows for the existence of a God.

The argument is, perhaps, the most difficult in metaphysics to comprehend, but one of the clearest and most convincing when comprehended.

You maintain that the will does nothing directly, without a nisus or volition; that nothing else arises directly from the will but this nisus or volition:

"The causality of the human mind accounts *only* for its nisus or volitions."—*Treatise on the Will*, p. 190.

"My proper and *immediate* causality lies in the production of volitions, or the primary nisus."—*Ibid*, p. 197.

"But then he is the absolute and contingent cause *only* of the primary causative nisus,"—*Ibid*, p. 216.

"I am *immediately* and solely the cause *only* of my volition."—*Ibid*, p. 197.

"This human causality, as we have seen, *directly* *accounts for only* the primitive nisus, efforts, or volitions."—*Ibid*, p. 191.

"The acts of the will are volitions, and *all the acts of wills are volitions*."—*Ibid*, p. 97.

Now if it be true, as Tappan so abundantly asserts, that the will only produces action, effort, or nisus, then if it determine its own acts, as well as produce them, it must do so by an act.

The will has gone into action. Tappan asserts that it went directly into action. Edwards does not dispute this, but he asks what caused it to go into action rather than not? or what caused it to go into action, at that particular time, rather than at some other time? Tappan replies, the will itself does this also. Well, then, Edwards would reply, if it does this, it must either do it by means of an act, or do it directly without an act. If you take the latter horn of the dilemma, then you contradict yourself, for you assert that the will does nothing directly without action, but the production of action; and if you take the other horn that it causes itself, to go into action rather than not, by means of an act; then he would ask, what caused this determining act to happen rather than not happen? Then if you asserted that the will did this also, he would just reply, if it did so, it must have done it directly without an act, or by means of an act; and, if you asserted the former, you would again contradict yourself; and if you asserted the latter, then you would be asserting that the will determined to produce its determining act by means of an act, so that, do as you may, you would have either to contradict yourself, and assert that the will does other things directly than produce its acts; or go on accounting for the determination of the act, by assigning one act, antecedent to another, on *ad-infinitum.*

Tappan's error arises from not observing the essential difference between the *production* of an act and its *determination.* Hence although he proves that the will produces its actions without an act, this never touches Edwards' argument, that if the will *determines* its acts, it must do so by an act.

The great strength of Edwards' argument lies in this: we never can account for determination by means of an act; the thing is absolutely impossible in the nature of things. But the Free-will controversy is concerned, not about the cause of the existence of an action or volition, but about the cause why it exists rather than not; or in other words, not about its *production* but its *determination.* Now when the Free-willer accounts for the determination, by referring it to the will, *a faculty of action only,* he involves himself unconsciously in the absurdity of the infinite series of determining acts.

Tappan tries to get rid of the difficulty, and blindfold his readers, unintentionally I have no doubt, by saying that, if the will produce its acts, it must determine them also; as for instance, if any cause produce motion, it must also give it a particular determined direction. Now it is quite true that the will cannot produce an act without the act being determined; it is quite true a body cannot move without moving in some particular direction. But it does not on that account follow, as Tappan would have us to suppose, that the very same thing which accounts for the *existence* of the action or the motion, accounts also for the *determination* of the action or motion.

Suppose a body should move east, all that is required to account for the mere motion, is simply a force sufficient to move the body. But if Tappan were to ask what was the cause which made the body start off in the direction of east rather than west, north, or south, or any other possible direction, he would certainly not consider it a very satisfactory answer to be told, that it moved east rather than west, or any other direction, simply because it had the power to move, or, that there was a power applied sufficient to move the body. Would he not reply, as every one else would, You have assigned a sufficient cause for the motion, but not for the direction of the motion?

And it would be as unsatisfactory, when we inquired in regard to a particular volition being produced, rather than thousands of other possible volitions, to be told that this particular volition was produced instead of any of the others, simply because the will had the power to produce volitions.

I make these remarks not for the purpose of proving either party in the Free-will controversy to be in the right or in the wrong. With this at present I have nothing to do. I defend this argument, simply because upon it I have based my proof of the existence of a God. That the mind may have the power of determining its own acts, I would not for one moment dispute; but that the will, meaning by the term, the simple power of action, should do this, I affirm is an *absolute impossibility*,—a thing which never was, is, or can be; and it is from the absolute impossibility of the thing that we know that the arrangements of matter cannot depend upon an act or a force.

V. TO PROVE THAT THE WILL BOTH PRODUCED AND DETERMINED ITS OWN ACTS, WOULD NOT PROVE ITS FREEDOM.

But to cut off all objections which may possibly arise from either side, I assert that the question regarding the cause of the determination of action, proves nothing whatever in regard to the question of freedom—that although we should prove that the mind (or the will if you choose) not only produces its acts, but determines them also; that is, not only acts but determines that it shall act rather than not act, or act thus rather than otherwise, this does not prove that the will is free in the free-will sense of the term, that is, in the sense in which it is understood in the controversy.

The grand question of freedom in regard to an act, is not, what caused it, or what determined it, but whether it was possible that it might not have happened, or have happened otherwise than the way in which it did happen. Now to prove that the will simply caused it, proves nothing in regard to whether it might not have caused it, or caused it differently. It does not follow that the act is free, simply because the will caused it, unless we have it previously established that the will is a free cause—the very point in dispute.

Neither does it settle the question of freedom, to prove that the mind or the will not only acts, but determines also that it shall act rather than not act, or act thus rather than differently. For if a thing act rather than not, or act thus rather than differently, then something must be the cause of this determination. Now to prove that the will or mind is this something, does not prove that the determination was free, that is, could have been different, unless it was previously established that the will or mind was a free cause. To prove that a cause, be the cause whatever it may, did such a thing, whether it was to *act* or to *determine* to act, only proves that it had the power to do as it did, not that it had a power to do what it did not do.

If the will determined that it should act rather than remain at rest, this of course proves that it had the power to do so, but it leaves the question of freedom, viz., whether instead of this determination it could have determined to remain at rest, unsettled. If the will should determine to act in the direction of east rather than in the direction of west, this proves that it had the power to make this determination; but this alone does not prove that it had also the power that it could have determined to have acted west instead of east.

Hence the question regarding the determination of the will, leaves the entire question of freedom untouched. Hence, also, all that has been said about self-determination, in as far as the free-will controversy is concerned, has been labour in vain. Hence, also, in whatever way this controversy may be settled, it cannot in the least affect what we have said in regard to the absolute impossibility of an act being determined by an act.

VI. CONSCIOUSNESS IN RELATION TO FREEDOM.

But, to remove the question of Free-will still further out of our way, and thus get quit of all opposition from this quarter, I assert that no fact of consciousness can in the least determine the question of freedom.

Professor Tappan, the generally acknowledged leader on the Free-will side (and I select him on this account,) seems to think consciousness proves free-will, because we are conscious of being the *efficient cause of our volitions.*[*] But, as we have already noticed, the consciousness of being the cause of a volition, does not prove anything in regard to whether we could have caused a different volition: the only question of freedom.

He asserts as a further proof of freedom, that we are not only conscious of being the cause of volition, but conscious of being the cause of the *determination of volition.*[†] But the consciousness of being the cause of the determination of our acts, does not prove that we might have determined them differently.

He adduces as a proof of our freedom, the fact, that we are not conscious of anything *necessitating* or *compelling* our volitions to be as they are.[‡] This proves that we are free from *restraint* or *compulsion*, but not that we are free from *necessity;* for the necessity under which we may be supposed to *act*, may lie in the background of all *counter action*. He forgets that the *mere absence* of any cause to act differently, from the way in which we do act, will as *necessarily* secure, and render it *impossible*, that any different action should arise, as though all the power in the universe were employed to keep us from acting differently.[*]

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[*] Treatise on the Will, pp. 327, 211, 212, 199, 119.

[†] *Ibid*, pp. 119, 213, 327, 271.

[‡] *Ibid*, pp. 119, 200, 214, 215, 212, 123, 502. Logic, p. 413.

Since neither the consciousness of being either the *producing* or the *determining* cause of our volitions, nor the consciousness of no power compelling or necessitating us to act as we do act, does not prove that we have the power to act differently; how, then, can consciousness prove the existence of such a power? Since it does not do it *indirectly*, does consciousness do it *directly?* That is, are we directly conscious of having the power to act differently from the way in which we do act? But before we ask the question, *Are* we conscious of having the power to act differently? we should ask, *Can* we be conscious of the existence of power at all? Is a consciousness of power possible? Mr. Tappan abundantly asserts this to be the case;[†] but let us test the matter:

What we are conscious of, is not power itself, but of the action or effect of power. Our powers or faculties themselves are noumena, and therefore cannot be objects of consciousness. The will, as the power of volition, we can have no consciousness of, being noumenon; but its action (volition) we are conscious of, it being phenomenon. We conceive or infer the existence of the power called will, from the consciousness of its action or effect,—the volition. Hence, to talk of being *conscious of a power* to act differently, is a philosophical blunder.

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[*] "Bestow consciousness on a tree, and let it grow, spread out its branches, and bring forth leaves and buds, blossoms and fruits, after its kind, without hindrance or obstruction:—it will perceive no limitation to its existence in being only a tree, and a tree of this particular species, and this particular individual of the species; it will feel itself perfectly free, because, in all those manifestations, it will do nothing but what its nature requires; and it will desire to do nothing else, because it can only desire what that nature requires."—FICHTE'S VOCATION OF MAN, p. 33.

[†] Treatise on the Will, pp. 69, 78, 123, 140, 142, 202, 203, 207, 208, 230, 305, &c., &c. Logic, pp. 413, 416.

Since we cannot be *conscious* of a power to act differently, have we any ground to *infer* or *conceive* of the existence of such a power? No, we have not. We have good grounds to infer or conceive of the existence of a power to act as we do act. The existence of the phenomena warrants us to infer or conceive of the power or faculty which produced them. When we have the phenomenon we can infer the noumenon, but not otherwise. When I make a certain volition, say to move east, I am warranted from the effect—the volition—to infer, that at that moment I had the *power* to make a volition to move east; but I have no warrant to infer, that at that time there existed a power to make a volition to move west, for here we have no effect from which to infer the power. We can infer the power to go east, because we have the effect—the volition to go east; but not the other power, for it has not manifested itself in our consciousness.

So, that the conclusion we must come to is this: we can have no *consciousness* of power—its existence must be *inferred* or *conceived*. But we can only infer the existence of a power when that power manifests itself; hence the only power which we are warranted to infer is, the *power to act as we do act*. We have no warrant to infer, that we have a power to act as we do not act. To infer the existence of such a power, would be to infer the existence of a power which never manifested itself. This is evident, for no one ever acted differently from the way in which he did act, and until he does so, a thing impossible, he never can have any warrant to infer that he has a power to do so, unless he can show how he can get at the noumena without the phenomena.

Our British and American metaphysicians who have been attempting to settle the question, by observation and consciousness, as a psychological problem, have completely mistaken the nature of the question altogether. The question of freedom is purely Ontological. It is a question regarding the *existence of a power;* a something lying beyond the regions of phenomena. The question is, whether there *exists in us a power* to act differently from the way in which we do act?

But this is not all. It is not only an ontological problem, but an impossible ontological problem. It is not simply a question regarding the existence of a power, but regarding the existence of a power which never manifests itself in phenomena. Hence, whether there exists such a power, is what by no possible means can ever be proved.

The thing which deceives the free-will metaphysicians is this, they mistake the consciousness of the *conviction* or *belief* that they have the power to do otherwise, for the consciousness of the power itself. They have the settled conviction or belief, that there exists a power to do otherwise (whether this conviction is true or false, I have at present nothing to do), and, without discriminating properly, they come to the conclusion that they are conscious of the existence of this power; whereas, all that they are conscious of, is, that they think they have this power—or have the strong belief or conviction that it exists.

If they were conscious of its existence, we would accept this as a sufficient proof of its existence; but we beg to demur at receiving as a sufficient proof that this power exists, simply the fact that they are conscious of having the *conviction* that it exists; for convictions are as often false as true. That this is the mistake into which Professor Tappan has fallen, is perfectly evident from the following:

"I make an effort, or volition, to attend to this book; or to this conversation, or to this subject of thought; and in every act of attention I have this *conviction*, I might not attend, or I might attend to something else. Again, I make a volition to raise my arm, &c., * * and in all these volitions, I have this *conviction*, I might forbear to make the volition, or I might make a different volition. * * * In any given case of causality, I cannot but *think* that I can forbear to do what I am doing, or can exercise my causality in a way entirely different."—*Treatise on the Will*, p. 199.

"Every agent has in himself at the moment of performing such act, the irresistible *belief* that he is a power to do or not to do—a power not necessitated, but free."—*Ibid*, p. 266.

"At the very moment a given volition follows a given strongest desire, there must be in the consciousness this *judgment*, viz., it is not necessary that this volition should follow this desire. * * But what would this *judgment* imply? Would it not imply that there is a power in the mind to resist the strongest desires?"—*Ibid*, p. 284.

No such thing, Mr. Tappan. The mere consciousness that you have this judgment, proves or implies that you have the judgment, but not that the judgment is true. It would be a very easy way of settling questions, to conclude that a judgment is true, simply because some one asserts that he is conscious of having the judgment. It might be an easy way, however, but not a very satisfactory one; for no sooner is Tappan gone than a Necessitarian steps forward and tells us, that, at the moment he followed the strongest desire, he was conscious of having the *judgment* that it was impossible he could have followed a weaker desire.

It will be replied: If the judgment that we had the power to act differently, be false, why do the most of men have it? Answer: We do not assert that the judgment is either false or true: with this at present we have nothing whatever to do. What we assert is, that the mere fact that Tappan and others have this judgment, does not prove or imply that it is true. But without taking either the one side or the other in this question, we would ask the objector in return, how it comes to pass, that almost every body forms the judgment that colour is a something in the object, and not a sensation of the subject? How is it almost all men judge that the distance and solidity of objects are seen by the eye? How is it that they judge the sun to look larger at setting than when in the meridian, while the fact is, at both times, the sun is seen under the same angle? How did it come about, that, for thousands of years, all mankind judged that the earth was stationary and immoveable while the sun revolved round it once a day?

The answer he would give us, would no doubt be: In these instances mankind formed the wrong judgment, because they had not the proper data from which they could form the right. The same reply will answer his own objection. Mankind may form the false judgment, that they have a power to act otherwise, because they may not have the proper data from which to form the right; and metaphysics may yet put men right in this case, as Astronomy and Optics have in the others.

But observe, we do not affirm that the free-willer is wrong in his judgment; with this we have nothing to do.

VII. AUTONOMY OF WILL.

There seems to be a pretty general impression among metaphysicians, that to prove what Kant calls the Autonomy of Will, establishes freedom; but from what we have already proved, this opinion will be seen to be without foundation; for the mere fact that the will is self-legislative, acts spontaneously according to a law prescribed by itself, does not prove that it could, under any particular instance, have acted differently. If it acted of itself, this shows that it had the power to act, and that it was not indebted to anything else for its action. If it determined the time, manner, and direction, &c., of the action, this shows that it was self-determined, —not determined from without; but all this leaves the question of freedom, viz., whether it could of itself have acted or determined differently, untouched.

Although a thing which does not act of itself, but is acted upon from without, cannot be said to have freedom, yet the converse does not necessarily hold true, viz., that if the thing is self-active it is free; for a self-acting thing may be conceived to have but only one possible way of acting, as that it should have two, three, four, or one hundred different ways. It does not require that the thing should even be prevented from acting differently, by anything from *without*—the mere absence of anything *within* to produce a different action, is all that is required to render the action of the thing necessary.

Any one, if he chooses, may call Autonomy by the term Freedom; but it would be strange logic indeed, to conclude, that because we may have proved the Autonomy of will, and consequently freedom of will, according to our definition of the term, that we had settled the controversy regarding the freedom of the will. This might be a short and easy off-hand way of settling the question, but certainly not a very satisfactory one.*

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* We have a notable instance of this way of arguing the question of Freedom in the writings of Dr. Samuel Clarke:—

"Action and Liberty," says he, "are identical ideas."—REPLY TO COLLINS, p. 15.

"The true definition of Liberty is a power to act."—*Ibid*, p. 20; see also pp. 24, 26, 30, 42.

"Action and Liberty, are, I think, perfectly identical ideas."—LETTERS TO A CAMBRIDGE GENTLEMAN, p. 405.

"The physical power of acting, which both in God and man is the essence of Liberty."—*Ibid*, p. 406.

"The power of self-motion or action, which in all animate agents is spontaneity, and in moral agents is what we properly call Liberty."—FIFTH REPLY TO LEIBNITZ, p. 283. See also pp. 281, 371, 289.

"A principle of acting, or power of beginning motion, which is the idea of Liberty."—DEMONSTRATION OF THE BEING OF GOD, p. 75; see pp. 74, 87, 110, 103.

What belonged to Dr. Clarke was to prove, not that an individual could *act*, but that he could have acted differently from the way in which he did

VIII. KANT ON FREEDOM.

Many of our British and American metaphysicians are chargeable with a mistake, in regard to free-will, of a less pardonable nature. Since Coleridge introduced German metaphysics into this country, it has become quite fashionable among free-willers to adopt the language of Kant, and talk of the will being exalted above the phenomenal law of causation, and therefore out of the region of *nature* and necessity; while these very gentlemen, with their next breath, condemn, as utterly absurd and ridiculous, Kant's notion of the subjective nature of time

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act; but he simply proves that men act, and then concludes that he has established freedom. This, of course, he has done in his sense of the term; for freedom, with him, is simply another name for the power to act; but this leaves the entire question of freedom, in the sense in which it is understood in the controversy, untouched. And yet, Dr. Reid, strange to say, when referring to this reasoning, has the following: "That the first Cause must be a free Agent, has been demonstrated so clearly and unanswerably by Dr. Clarke, that I can add nothing to what he has said; nor have I found any objection made to his reasoning by any of the defenders of necessity." Dugald Stewart, following his example, writes as follows: "The reasoning contained in it (Reply to Collins) together with those on the same subject, in his correspondence with Leibnitz, and in his Demonstration of the Being and Attributes of God, form, in my humble opinion, the most important, as well as powerful, of all his metaphysical arguments."—Appendix on Man's Free Agency (Hamilton Edition) p. 376.

But, says a greater than either, "I may observe that among others, that the definition of liberty, given by the celebrated advocate of moral freedom, Dr. Samuel Clarke, is, in reality, only that of the liberty of spontaneity, viz., 'The power of self-motion or action, which, in all animate agents, is spontaneity, is, in moral and rational agents, what we call liberty.' .

"This self-motion, absolutely considered, *is itself necessity*."—Hamilton's Notes on Reid, p. 601.

and space. They either forget, or are not aware, that unless they also adopt Kant's notion of the subjective nature of time, this explanation of freedom is without meaning; yea more, that, without a subjective time, it leads to absolute and universal fatalism.

Kant held that everything which begins to be must have a cause, and that, as antecedents and consequents, their connexion is indissoluble. Everthing which is made to *begin to be* by a cause, is necessary. Everything which happens in time begins to be, and, consequently, must happen necessarily. How, then, inquires Kant, is freedom conceivable? How, can we escape from an absolute necessity? Only in this way, he replies: Time is nothing in itself, it is merely a subjective form—the formal condition, not of things in themselves, but merely of phenomena (and phenomena, be it observed, with him, are subjective also—appearances). But the Will or rather the Reason, as a faculty, is not phenomenal—a mere subjective appearance—but a something in itself, and consequently, as such, does not exist in time. But it stands related to a series or chain of phenomena as their origin, hence it must be viewed in a twofold aspect. Viewed as the originator of the series of phenomena,—in its *effects*—something begins to be, and as such, it may be said to be sensuous and under the necessity of *nature*. But in regard to its *action*—the transcendental ground or foundation of this effect—it is intelligible; and as an intelligible cause, its action does not begin to be, for being noumenal it is not in time, and consequently, we cannot ask what caused the act to begin to be, for *beginning to be* is a time condition, and has no application to noumenon. And if time is not applicable to this act, then it did not require an antecedent cause, for antecedence, be it observed, is a time condition; and if nothing could be antecedent, then the conclusion, of course, which Kant comes to is, that it could not be necessitated by antecedent causes, and hence the possibility of freedom, or more properly speaking, (for Kant does not even admit that freedom can, as a speculative problem, be proved to be possible,*) hence, the proof that freedom cannot be shown to be impossible. And if freedom is not an impossibility, then I am allowed, continues Kant, to postulate its existence in my Practical Reason, and this is all that I contend for in my Speculative Reason.

But before any one can adopt the Kantian analysis, he must be prepared to adopt, not only the ideality of time, but also the ideality of everything in time. He must hold time to be the subjective formal condition of phenomena only, and all phenomena, including, of course, all the primary as well as the secondary qualities of bodies, to be nothing but *appearances;* for if time is anything in itself, then the faculty Reason, as a thing in itself, is in time, and if so, then its acts are under time conditions, and necessary. And again, if phenomena are things in themselves and under the law of necessity, then the reason also being of the same nature, viz., a thing in itself, must also fall under the same law, and consequently, under necessity.

But in case any one should suppose that I have misunderstood Kant in this matter, I shall state his opinion in his own words:—

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* See "Critique of Pure Reason," p. 345 (Bohn's Edition); "Groundwork of the Metaphysics of Ethics," pp. 78-82, (Clark's Edition.)

IDEALITY OF TIME.

"I cannot see how they who insist on regarding space and time as modes pertaining to the existence of things in themselves, can escape the fatility of actions."—GROUNDWORK OF THE METAPHYSICS OF ETHICS. Clarke's Edition, p. 154.

"If the Ideality of space and time be not admitted, Spinozism is the only alternative, where space and time are taken for essential modes of the Supreme Being."—*Ibid*, p. 155.

IDEALITY OF PHENOMENA.

"For if phenomena are things in themselves, freedom is impossible."—CRITIQUE OF PURE REASON, p. 332.

"As the complete and unbroken connection of phenomena is an unalterable law of nature, freedom is impossible—on the supposition that phenomena are absolutely real. Hence those philosophers who adhere to the common opinion on this subject can never succeed in reconciling the ideas of nature and freedom."—*Ibid*, p. 333.

I have no doubt but when our free-will metaphysicians come to see the nature of the Kantian argument, which they have been so freely using of late, that we will then hear no more of the will being not under the phenomenal law of causation.

Now a few words in justification of our long digression. When we based the proof for the Being of a God upon the celebrated argument of President Edwards, it became necessary, in the first place, when a published refutation of it has been before the world for 18 years without being replied to—a refutation which has been supposed by free-willers in general to be complete,* to show, that the

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* Professor Cairns in his work on Moral Freedom, p. 279, quotes Tappan on this point as conclusive.

Professor Henry of New York, in a note in Cousin's Elements of Psychology, falls into the same error. "His (Edward's) argument is, that reviewer has completely misunderstood the argument, and consequently, has determined nothing whatever against it. But this was not enough, for however clear and satisfactory the argument might appear, yet it would be condemned without further inquiry by free-willers, simply on account of its necessitarian tendencies; hence to avoid this, it became necessary to prove, that the entire argument had nothing whatever to do with the question of freedom—that one might use the argument with the most perfect freedom, without being obliged to take any side, whatever, in regard to this much disputed question. Having gone this length—to get quit of all prejudices from either side it was better to follow the question a little further, first beyond Psychology, and then Ontology, until it resolved itself into an impossible problem. By so doing, our argument is freed from the possibility of being charged with tending either to Fatalism on the one hand, or to Arminianism on the other.

if a given volition be not determined by motives as its cause, it must be without a cause; or else it must be determined by a previous volition, and that by another, and so on, *ad infinitum*. But deny his inference; lay your finger upon the given volition, or upon any one in the series, and call upon him to prove that the general faculty of willing is not a power adequate to the direct PRODUCTION of the given volition—and his reduction is at an end."—P. 293.

Professor Upham in his *Treatise on the Will*, p. 343, falls into the same misconception in regard to the argument.

IX. INTELLIGENCE IS IMPLIED AS A CAUSE OF THE DETERMINATION OF MOTION.

We have got a positive cause for the motion, but we must proceed further, and try to arrrive at the positive cause of the determination of motion. We have found what it really *is not*, but we must try and find what it really *is*.

On looking at the formation of an organic body, we are irresistibly led to the conclusion, that it not only has a cause, but that intelligence, in some way or other, is concerned as a cause. What is there then about the process, which leads the mind to this conclusion? It is not the mere motion of the matter; mere motion does not necessarily imply intelligence, it only implies action. If it is not the mere motion of the matter in its formation, which implies the intelligence, then it must be the *determination* of the motion which implies it. How does the determination of the motion imply intelligence? Because it involves the third great metaphysical principle, which lies at the foundation of all inquiry, viz., the principle of Final Causes. The determination of the motion of matter in the formation of an organic substance, involves the idea of an end or purpose—a Final Cause.

Take the formation of the eye for instance. Each particle of matter must take a particular determination of its own, both in regard to time and space, for each particle must take a different position in the eye; but all the determinations must be so adjusted, that the aggregate result is an eye. Here we have means to an end, a Final Cause.

The thing to be formed is the eye, but at the time the determinations are taking place there is no actual eye. What then is there? There must be an ideal eye, and the determinations must be made to happen in agreement with this idea. The determinations are working out an idea, and when the determinations are finished, the idea becomes realized. But there is more than this. The eye serves a purpose,—it is used for viewing objects at a distance; hence the particles are determined, not only in relation to the idea of an eye, but to the idea of a purpose beyond the eye. But an idea implies thought or intelligence, for an idea can have no existence but in thought. Hence we come to the conclusion, that intelligence is necessarily involved as a cause in the determination of the motion of the matter, in the formation of an organic substance. Hence we have so far positively settled our question; we have found that intelligence at least is so far concerned as a cause of the determination.

Now since intelligence is found to be, at least, partly a cause, if it can be shown that it completely accounts for the determination, then the law of parsimony forbids us to assume any other cause. This will be made evident, after we establish another point, viz., that the action which causes the motion, and the intelligence which determines it, must, although radically distinct in their natures, be the action and the intelligence of the same substance, or in other words, that the causes are not different substances, but different powers of the same substance.

X. THE CAUSE OF MOTION, AND THE CAUSE OF THE DETERMINATION OF MOTION, ARE DIFFERENT POWERS OF THE SAME SUBSTANCE.

We prove it thus. Let us suppose the motion to be caused by one substance, and the determination by another; that is, suppose one substance A should by its action move the particles, and another substance B, cause the determination of the motion. If B cause the determination of the motion, it must do it by causing the determination of the action of A, for, as has already been noticed, the determination of the motion must depend upon the determination of the action. Now if the substance B determines the particular time and direction of the action of A, then it must be conceived to do it by acting upon A, in some way or other; or else how could the substance A know the particular time or the particular direction determined upon by B? How could A act in harmony with the determination of B, if B did in no way act upon it? And if you suppose that B, in determining, acted upon A, then we fall into the absurdity of determination by an act: and if we do not suppose that B acted upon A, but that A acted agreeably to the determination of B, without being acted upon by it, we must suppose that A is endowed with intelligence to know the determinations of B. If A, for example, should start into motion at the very moment, and in the very direction, determined upon by B, without any action of B upon it, it must be, because it knew the time and the direction fixed upon by B without being acted upon; and if this be the supposition we take, it being the only one at present allowed, then it turns out, after all, that it is not B which is the cause of the determination of A, but its own intelligence : that is, A moves at the proper time and in the proper direction, because it knows the proper time and the proper direction. Hence the action, which is the cause of the motion, and the intelligence, which is the cause of the determination, belong, and *must* belong, to one subject, viz., the substance A.

XI. INTELLIGENCE IS COMPLETE IN ITSELF AS A CAUSE OF THE DETERMINATION OF MOTION.

Take the case of the eye. If a substance has the power to move the particles, that is, the power to act, all that it requires in order to determine the motion, is, to know in what way and at what time to act. Now, to know this is to have intelligence, for intelligence is the power of knowing. If I am to build a house, and have the power to move the stones, what I then require, is simply to know how and when to move them. When the power to act is in one substance, and the intelligence in another, the thing cannot be done; for although a substance has the power to act, this power is of no use when it does not know how or when to act. The other substance, again, although it may know both how to act and when to act, yet the knowledge is of no service to it, for it has not the power to act; but let a substance have them both, and the thing is complete.

Now, when we know that intelligence is a cause of the determination, and also a sufficient cause, the law of Parsimony forbids us to seek for any other cause. Having proved that the action which moves, and the intelligence which determines, inhere in one subject—that it is the same substance which acts, that knows—what, then, do we call this substance when viewed as a thinking or knowing substance? We call it Intelligence. What would we call it when viewed as an acting substance? Certainly we would call it Will. Hence, it follows of necessity, that the cause of organization is a substance which has both Intelligence and Will.

It follows, also, as a corollary from what has been proved, that Materialism, which assigns different powers to different parts of matter, must, of necessity, be false, for it must not be one part of a subject which thinks, and another which wills, but the identically same unit must do both.

But although we have proved that the cause of organization both acts and thinks, or, in other words, is possessed both of Will and Intelligence, still this does not prove it to be a Personality. A Personality is possessed of Feeling as well as Intelligence and Will; therefore, before the argument is complete, we must deduce Feeling from Organization. But this can be easily done, for wherever there is Intelligence and Will, there must also be Feeling, as we shall immediately see.

XII. ORGANIZATION IMPLIES FEELING IN THE CAUSE AS WELL AS INTELLIGENCE AND WILL.

Suppose a substance endowed with intelligence and will, so that it could produce an organic body, still nothing would be produced unless the substance had the *desire* to produce the body. The mere capacity to move the particles, and the intelligence to know the way to move them, so as to produce an eye, would never result in an eye, unless there were, in addition to all this, the desire to produce the eye.

And in addition, the same particles which served for the production of the eye, might equally do for a hand, or a foot, or perhaps a hundred different organic objects; and the same intelligence and will which produced it, might produce either of all these possible objects. Now, there must be some additional cause, why the eye is chosen to be made in preference to any other possible object; and this cause can only be: the eye is desired rather than any of the others. It will be replied, that the eye was chosen in order that its function might be fulfilled: but this is just, in other words, saying that the fulfilment of this function, by means of the particles made into an eye, was *desired* rather than the fulfilment of any other function by means of them, and hence the eye was chosen. And we might, in like manner, proceed, referring the choice to a purpose still ulterior, until we reached the ultimate Final Cause, and still it would turn out, after all, that the eye was chosen because this ultimate end was desired rather than not, or rather than some other end. The explanation of the whole matter is this: all things antecedent to the Final Cause—the ultimate end of all things—are but means to the production of this end. The existence or fulfilment of this great end, is the object *desired* by the Efficient Cause of all things. All things antecedent are therefore determined, by the Intelligence, to be produced, because they are the means or the way to the fulfilment of this great end.

We have thus arrived at the personality of the Cause. We have proved that the cause of organization is a Being possessed of Intelligence, Will, and Sensitivity—a Personality. But we have not proved that organization is the production of one being or personality. It may, for anything which has yet been shown to the contrary, be the production of a plurality of personal causes, so we must yet find a something in organization which implies that it is the production of one cause.

XIII. THE UNIVERSE THE PRODUCTION OF ONE CAUSE.

All things and all events have a connexion one with another, both in Space and Time.

CONNEXION IN SPACE.

When we view things and events, as they exist or happen in space at one and the same moment of time, we perceive that they do not simply stand to each other in the mere relation of co-existence; we perceive that they stand to each other in a dynamical relation; that all bodies "in so far as they are co-existent, stand in a relation of complete community of reciprocal action to each other." There is not an atom in the material universe, which does not attract or affect all other atoms, and in like manner is attracted itself by all others: there is thus a mutual action between all bodies in the universe. There is also the same reciprocal connexion among events. An atom cannot move in space, without changing the position in some way or other of every other atom in space, and the change or motion of this atom is in like manner affected by the position of all other atoms.

These conclusions may be startling to those not accustomed to think on these subjects; but they are nevertheless true, as every one knows who has any acquaintance with the law of universal gravitation. There are other connexions of objects and events in regard to space, but these are the most striking, and will suffice for our present purpose.

CONNEXION IN TIME.

When we view objects and events as they stand related in time, we find, that they do not simply stand related to each other as antecedents and consequents,—that there is something more in the relation of antecedents and consequents, than a relation in regard to time. We find that, as antecedents and consequents, they stand to each other in a double relation; they stand related in time as Cause and Effect, and as Means and Ends. A stands related to B as Efficient Cause, but B stands related to A as Final Cause. A is the cause, B the effect; but A is also the mean, and B the end. This double relation runs through all events, and all things in one continuous chain, beginning at the First Cause and extending onwards in one unbroken concatenation, until it reaches the ultimate Final Cause of all things.

An antecedent may be viewed as standing to a consequent either as a Cause or as a Mean, and the consequent may be viewed as standing to the antecedent either as an Effect or as an End.

In searching for the Efficient Cause of things, we pass backwards from the consequent to the antecedent; but when we are searching for the Final Cause or End of things, we pass forward from the antecedent to the consequent. If we carry on the backward process, we will ultimately reach a great First Efficient Cause of all things. If we carry on the forward process, we will ultimately reach a great ultimate end, which will be the Final Cause of all things. At the beginning of the chain, stands the great Efficient Cause; at the end of it stands the great Final Cause or End of all. All events and all things which exist at present, are mutually connected in a dynamical relation. All events and all things which ever existed, or ever will exist, are also connected in a double relation with all things which now exist. Hence all things past, present, and to come, are thus mutually connected, one with another.

When we turn our eyes on the multifarious objects in the universe around us, we are lost in the midst of confusion, and we instantly demand an explanation; everything appears isolated and alone. We try to bring a number of facts under one general conception or law, and thus induce an order and unity amongst them.

We seek a unity among these facts, in three different ways, corresponding to the three metaphysical questions which we ask at the commencement. These three fundamental questions are derived from the Reason, and thus divide all inquiry into three branches. The Reason being possessed of the principle of Being or Substance, seeks to arrive at a unity in regard to what is. It is therefore never satisfied, until it gets at the law which binds all things together co-existing in space. The Reason, prompted by the principle of causality, tries to find a unity among things past, by going backward from consequent to antecedent, until it arrives at one great First Cause, which will account for all that has happened —all that has come into existence.

Being also possessed with the principle of Final Causes, it seeks a unity among all things, past, present, and future, by passing from the antecedent to the consequent, until it arrives at one great End in the future, which will explain *why* all things have been brought into existence.

The connexion of objects and events in space falls under the first question. The connexion of objects and events in time falls under the second and third questions.

We have seen that the mind has found a unity, in regard to the first question, in the law of universal gravitation, which so far satisfies it. We have also seen that it has found a unity, in regard to the second question, which also so far satisfies,—we have found that it has arrived at the conclusion, that the cause of things is a substance or substances, endowed with Intelligence, Will, and Sensitivity. The human mind has arrived at a partial unity in regard to the third question also; but on this we shall not dwell, it being the second question which at present concerns us, viz., What is the Cause of all things?

We have found that it is a substance or substances endowed with Intelligence, Will, and Sensitivity. But the unity is not complete: we must try to find out if all things can be traced to one substance—one First Cause.

Now if all things past, present, and to come, are united in a unity, then there must be a unity of plan running through all things. If all things which ever happened are connected in the relation of means and ends, then every thing which has happened, must be adapted in relation to the final end; that is, everything was made, and made to happen as it did happen, in order that the final end might be secured. Then if this is the case, there must have been a Being who, from the beginning, had the Final Cause or End in view. And the first thing determined must have been this end, and then all things would afterwards be determined and arranged as means to it.* Now when all things are made after one plan or idea, arrranged so as to work out one purpose, it is far more rational to conclude that it is the production of one designer, than that it should be the work of many. If we assume that there were more designers than one, we must be able to give some rational explanation how they all happened to fix upon one end, and how each designed his particular part without producing confusion or encroaching upon his neighbour.

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* We do not here include human volitions, or the direct consequences which may flow from them. Human volitions may, and no doubt, have a mutual dynamical connexion with all things, past, present, and to come; and still they may be supposed not to be determined by the First Cause as a means to the Final End. That there should be human beings and also volitions—must be supposed to be determined as a means to the Final End, but not the particular volitions. But we do not affirm anything positive in regard to the matter, but leave it as an open question. But to avoid taking any side at present, in regard to the Free-will controversy, we affirm that it is not necessary to our argument to suppose them determined.

The difficulty is the same, if we should assume that there are more ultimate ends than one, and that each being arranged his part to suit his own particular end. For since all things which co-exist, mutually affect each other, so that a change in one produces a change in all the rest, it was necessary, before any one of these Beings could arrange events, so as to bring about his own end, that he should know the arrangements made by all the others, in order that he might make his arrangements, so that with the mutual influence of the arrangements of the others, which of course would be constantly affecting his in all future time, his end might be secured. Hence no one could come to a conclusion, in regard to his arrangements, until he first knew the arrangements come to by the others; but the others would be in the same difficulty as he, for none of them could possibly come to an arrangement, until he had concluded his, hence they never could know how to arrange events, so that their ends would be secured.

XIV. THE INFINITY OF GOD.

We have proved the unity of God—that the universe is the production of one personal being, endowed with Intelligence, Will, and Sensitivity; but we have not proved that it is the production of an Infinite being. But with the exception of the infinity of his past duration (which, however, is the most startling and overwhelming of all infinities,) this cannot be proved *a posteriori;* for this simple reason, the universe must always appear to us as finite. Now, we are not warranted to infer an infinite cause from a merely finite effect. We are only warranted to infer a cause sufficient for the production of the effect. Now, if the universe is finite, it may possibly be the production of a finite cause; at least, the effect does not warrant us to infer more. We do not say that the universe can be the production of a finite cause, for the universe may be infinite for ought that we can prove to the contrary; but to us it must always appear finite, and consequently, can never logically demand more than a finite cause. But observe, that this does not give us the least presumption to conclude, that the cause of the universe is finite; for the reason why we do not conclude that the cause of the universe is infinite, is not from anything which we can find in the universe; but because, from the *limited and finite nature of our faculties*, we are not able to grasp as much of the universe as ever can warrant the inference. Hence the fact that we cannot prove the great First Cause, *a posteriori*, to be infinite, does not prove him not to be infinite; it only proves that we are finite.

We cannot rise logically from experience to the infinity of the great First Cause; but we may rise to some faint conceptions of his immensity. First, as regards Intelligence:

The problem of the three gravitating bodies has baffled the greatest intellects which have yet attempted its solution. Now, if we cannot tell what will be the result of merely three bodies mutually influencing each other, what must be the intelligence of the great First Cause, who can not only tell the result of the mutual action of all the bodies in the universe, but also, of all that are, were, or ever shall be?

Secondly, In regard to power: when a few pounds' weight are all that the strongest arm is able to move, what must be the power of him who set the entire universe in motion?

XV. AN OBJECTION.

It may be stated, as an objection to what has been advanced, that it implies, that the operations of nature are the immediate result of the First Cause, instead of being indirectly produced by means of subordinate agencies. Answer: Although it is more than probable that the operations of nature are the immediate result of divine agency, still the argument does not necessarily imply this. What the argument logically implies, is, that the motions of organic matter are the effects of *Action*, and the disposition and arrangements of the matter, the effects of *Intelligence*. And also, that the intelligence and the action must arise from one subject. Now, the argument does not imply that there are no subordinate agencies, it only implies, if there are subordinate agents, they *must* be agents which possess both Intelligence and Will. And if we assume that the operations of nature are the result of a plurality of separate agents, it obliges us to assume, also, that they must all be subordinate to one who has a vast plan or purpose to be served by their agencies.

The fundamental position we insist upon is this, whatever the immediate cause of organism is, it *must*, of necessity, be a substance endowed with intelligence and will. And if this position is made good, which, I trust, has been, we can then easily rise, by the laws of Logic, to a Personality, who is the cause of all things. And if we fail in making good this position, viz., that this, of necessity, must be the nature of the cause—if it can be shown, that so much as the leaf of a tree, or a blade of grass, could be produced by an agency, void of intelligence and will, then we never can arrive at the proof of a Personal intelligent First Cause of all things—a God; as will immediately be seen.

If we could conceive that the Deity could endow some unconscious unintelligent agent, call it Plastic Nature, or whatever else you may, so that it could arrange a number of atoms into that peculiar form as to constitute the leaf of a tree; by adding the conception of a higher degree of power of the same unconscious nature, it might be conceived to produce the tree itself, and if one tree, why not one hundred? And if a hundred, why not a whole forest? And if a tree might be produced by an unintelligent agent, why not an animal? And if one animal, why not all animals, or why not all things? It is merely a question of degrees; the same kind of power which may be supposed to produce one will do for all. And if the operations of nature could be carried on for one second by unintelligent agencies, why not for a minute, or a year, or a century, or for ever? And if so, we can have no proof that there ever was an Intelligent Agent at work in nature, or in other words, that there is a God. All that we would require in this case, in order to get quit of the necessity of a God, would be simply to assume, that this Plastic Nature, or whatever else you may call it, existed eternally. So that there is no way possible of establishing the existence of God, but by proving that organism can be produced by nothing else but a substance endowed with Intelligence and Will, and the way which this, at least, may be done, I trust has been fully shown.

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